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FOR MEN WHO MANAGE

food processing

JANUARY 1957

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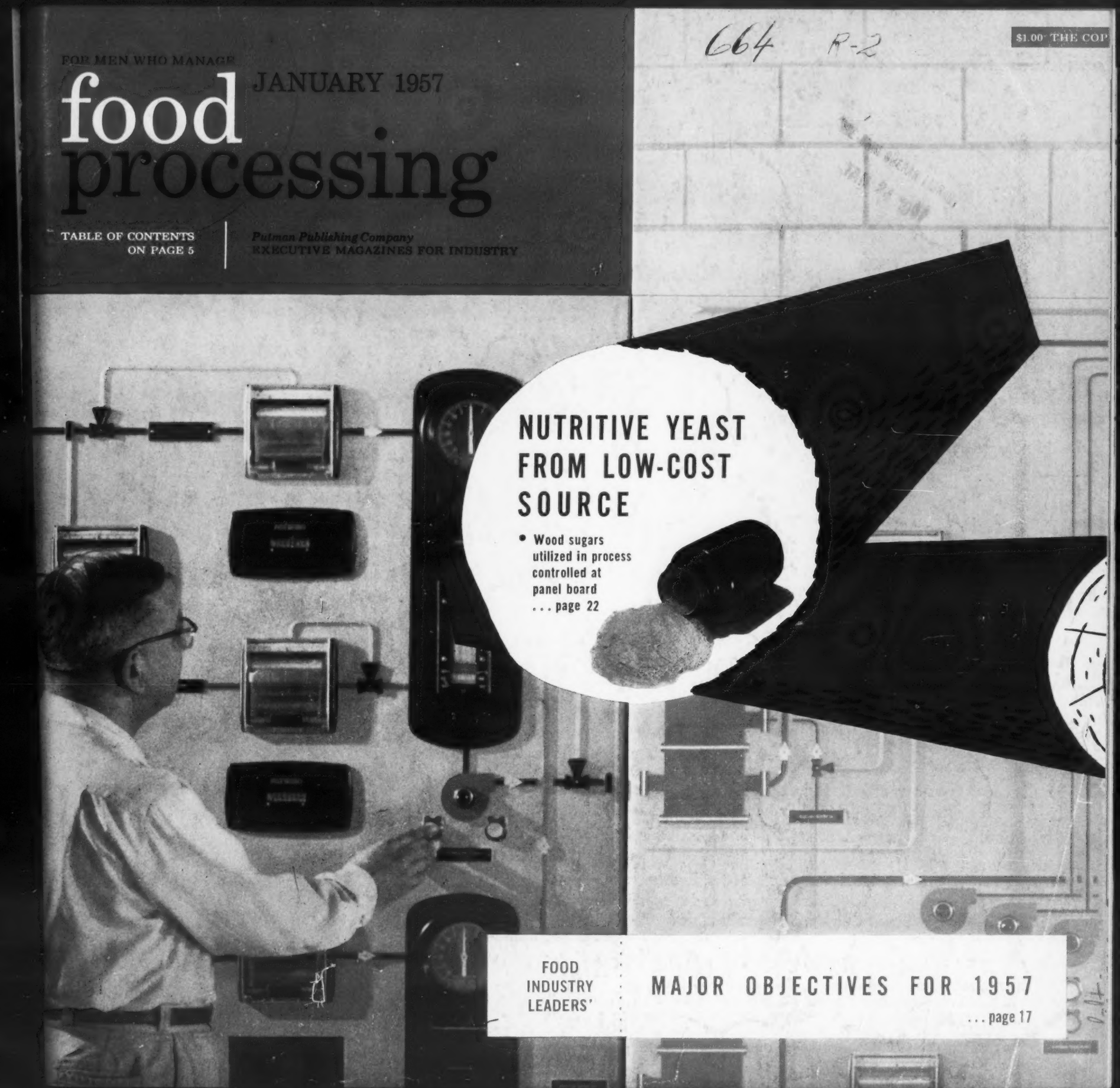
Putman Publishing Company
EXECUTIVE MAGAZINES FOR INDUSTRY



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Times have changed!

HAVE YOU LOOKED AT GLYCERINE LATELY?

Today, you can specify glycerine with confidence . . . benefit from its many useful physical and chemical properties.

Shell glycerine meets industry's highest standards for purity, and is unsurpassed in uniformity.

Whether you order in drums or tank cars, Shell's conveniently located storage facilities assure prompt and dependable delivery. Call your Shell representative for specifications.

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SHELL

When inquiring check 7005 opposite last page

that's

Cherchez Putman!

Putman Et Cie
des magasins pour gerants d'industrie

interesting

Southern exposure — 'Francais' — or 'the lighter side'

As you're probably wondering what the picture at left is all about, we'll give you our sight se'er's spiel: You're looking at 111 *Place Quelquechose,* which though resembling a "bit of Paris", is really the rear south wall — or what we call "the lighter side" — of the Putman Publishing Company building at 111 East Delaware Place, Chicago.

Some of our readers know about the reasons behind the unusual decorative scheme. A glance at the water tank reminds them that the smiling face was the first step in an effort to "liven things up" and "give a lift" to an otherwise staid atmosphere. The story about "the face" appeared in Chicago and other newspapers last May.

When it was decided to transform the rear wall, it didn't take some skillful painters long to brush on brilliant colors to create windows, striped awnings, not to mention a sidewalk cafe, complete with patrons enjoying their leisure.

And say, if you'd like to see all this first hand, come around anytime, and we'll say "*entrez vous.*"

'Excellent management' ratings to: National Biscuit and Quaker Oats

Prominent among those winning excellent management rating from the American Institute of Management are two of the country's leading food companies. Each has been the subject of a feature article and the cover illustration in recent issues of FOOD PROCESSING — National Biscuit Co. in October, and Quaker Oats in November.

In assigning an "excellent rating", the Institute found that both had earned better than 7500 points on the comparative rating scale, of a possible 10,000. In making ratings ten major categories are considered: economic function; corporate structure; health of earnings; service to stockowners; research and development; directorate analysis; fiscal policies; production efficiency; sales vigor; and executive valuation.

Over 400 US companies now have such a rating but only 20 or so are in the food field.

How to protect your foods against down-grading by using pure Diamond Crystal Flake Salt

Diamond Crystal *Flake* Salt has the highest uniform purity of any salt made. Ends danger of costly spoilage and "off" flavor from an impure granular salt or rock salt brine. Improves taste and keeping qualities of foods.

DO YOU KNOW what the calcium, magnesium, copper and iron in an impure salt can do to your products?

These impurities form unappetizing scums and discolorations on vegetables. Slow down curing of meat, make it tough and bitter-tasting. Give frozen fish poor texture and fishy taste. Cause oxidative rancidity in foods containing fats and oils.

Today's food market is keen. Competitive. The quality of your product is one of your best sales weapons. Why spoil it with an impure salt?

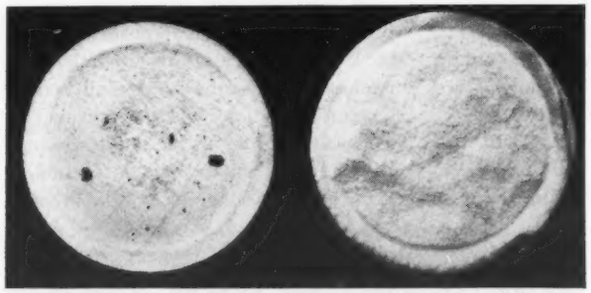
Why flake salt protects quality

Only Diamond Crystal is made by the exclusive Alberger system. This produces flake salt 99.95% pure. An amazing high purity that gives Diamond Crystal *true salt flavor* . . . without the bitter taste imparted by calcium and magnesium compounds, present in less pure salt. By using Diamond Crystal Flake you can *salt to the limit* for optimum flavor.

Diamond Crystal Flake averages less than 1.5 parts per million of copper or iron. Helps prevent oxidative rancidity and off-flavor development.

Are you using the right salt?

The grain size and rate of solubility of salt has an important effect on your product. That's why



Unretouched photograph of actual filter test shows difference in purity and cleanliness between a leading granular, cube-like salt (left); and Diamond Crystal Flake Salt (right).

Notice how impurities in the granular salt used discolored the corn on the left—while pure Diamond Crystal has protected the golden appeal of the corn at right. Which brand do *you* think the housewife would buy again?

Diamond Crystal Flake Salt is precision screened into a wide range of grain sizes to meet the most exacting *individual* requirements of your product.

Send for free analysis

If you are not sure that the salt you're using is suitable for your product, send a sample of it with the coupon below to Diamond Crystal. The salt will be given a careful laboratory test and the results forwarded to you free of charge.

— — Mail this coupon for free salt analysis — —

Technical Department FR
Diamond Crystal Salt Co., St. Clair, Michigan

I enclose a sample of the salt I now use. Please have it tested and send me the report free of charge. I would also like information on special Diamond Crystal Salts made for my industry.

Name_____

Company_____

Product_____

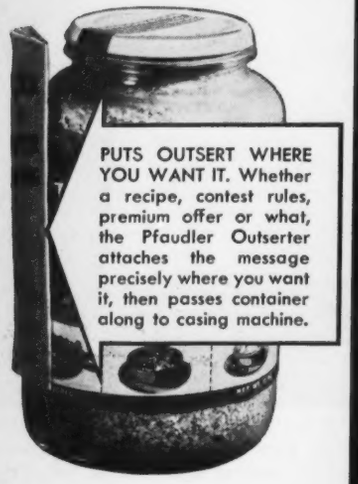
Address_____

City_____ **State**_____

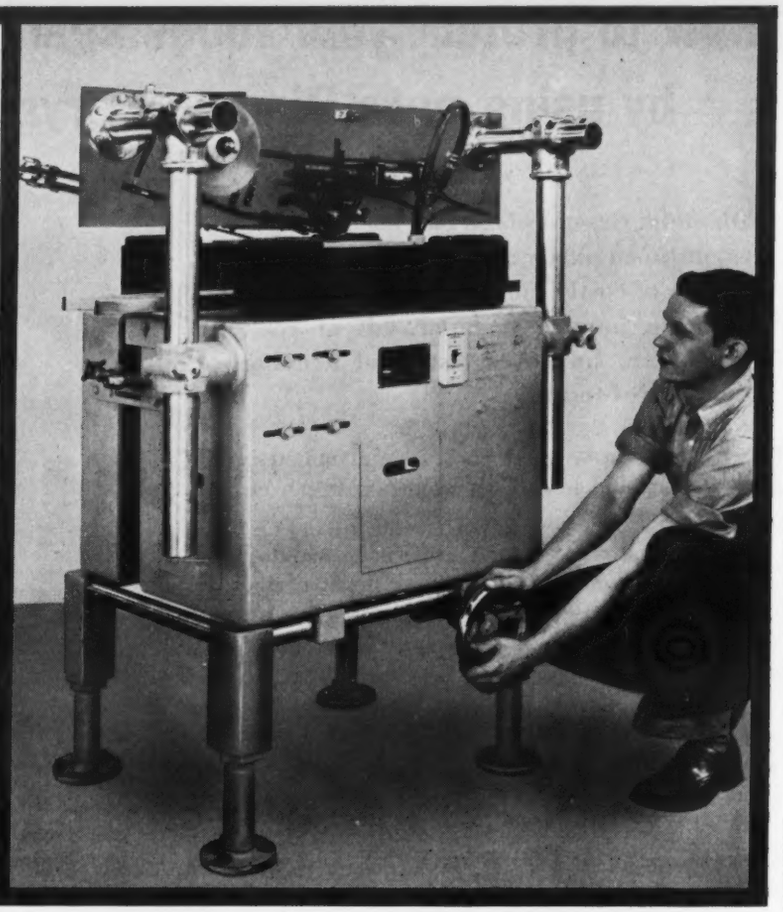
2664.051
F737

When inquiring check 7006 opposite last page

UP TO 220 OUTSERTS PER MINUTE attached automatically—expensive hand labor eliminated. Pfaudler Outserter handles cylindrical containers of tin, plastic, glass or paper 2⅜" to 7¼" in length; 1¼" to 6½" O.D. Machines are also available for other sizes and shapes.



PUTS OUTSERT WHERE YOU WANT IT. Whether a recipe, contest rules, premium offer or what, the Pfaudler Outserter attaches the message precisely where you want it, then passes container along to casing machine.



Here's how you can move your product faster

Apply sales messages to your package automatically—economically

Now—you can give *your* package a fast push into the shopper's cart—inexpensively!

Here's a machine that applies up to 220 point-of-sale attachments per minute—*automatically*. The Pfaudler Outserter completely eliminates hand labor—pays for itself *quickly!*

But even more important, your products sell better. For example, one user reports that before they began using the Pfaudler Outserter in 1953, sales were down from the previous year 20%. In 1954, using outserts, sales increased 10%; in 1955, an additional 19%; and so far this year, 15%. This was all accomplished *without* extra advertising support!

This simply illustrates what smart merchandisers already know. Give purchasers ideas about the use of your products and they will use more of them. But make it easy. Now that the cost of doing the outserting job is no longer a factor, why not let Pfaudler sales engineers show you how you can use the Pfaudler Outserter to advantage in your business. You can attach recipes, contest rules, premium offers, etc., automatically to cylindrical packages of any material. Call your nearest Pfaudler office or send us a sample container and indicate where the outsert should be attached. We'll be glad to give you all the facts.

THE PFAUDLER CO. **Rochester 3, New York**

See new Pfaudler Outserter in operation at the Canners' Show

When inquiring check 7007 opposite last page

Over the editor's shoulder

Changing more swiftly

The order of the day is more and more progress. For not to progress is to fall behind. That is one principle which leaders of the food industry understand as amply demonstrated in their statements of objectives for 1957.

As no less than the president of the H. J. Heinz Co. points out, there was a time when food processing moved along well-trod paths and current goals were very much like the goals of ten years previous.

Not so today!

So fast is the picture changing that the major objective for 1957 of the Heinz Company's president is "to create an awareness in all levels of management that they are working in an industry whose character is changing more swiftly than any of us could have dreamed five years ago."

His statement of his major objective for 1957 along with similar statements from other food industry leaders will be found in this issue beginning on page 63.

Howard P. Millerick

EDITOR

VOL. 18, NO. 1/JANUARY 1957

food processing

(FOOD PROCESSING PREVIEW)

For Men Who Manage / Published in Chicago, Food Capital of the World

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For cost-saving control of...

STRESS CORROSION CRACKING

Carpenter 7Mo Stainless Tubing & Pipe

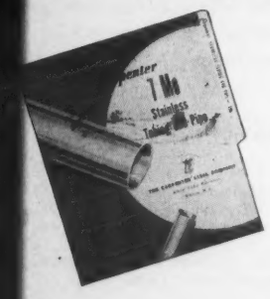
Take a closer look at the above section of Carpenter 7Mo Stainless Pipe welded to a Type 316 fitting. See how stress corrosion cracking has ruined the fitting, just as it has destroyed the piece of stainless pipe at right.

Note how the cracks in the fitting stop abruptly when they reach the 7Mo pipe. And this pipe has already outlasted three such fittings. The photomicrograph shows the unmistakable proof.

If you have conditions where chlorides, caustic or sulphite solutions are present, Carpenter 7Mo's excellent resistance to general corrosion, pitting and stress corrosion cracking may prove to be a real cost-saver. Let's discuss your particular application now.

The Carpenter Steel Company
Alloy Tube Division, Union, N. J.

Export Dept.: The Carpenter Steel Co., Port Washington, N. Y.—"CARSTEELCO"



Write for this Carpenter 7Mo Technical Bulletin.

Carpenter
more than corrosion resistance
Stainless Tubing & Pipe

When inquiring check 7008 opposite last page

Food Regulations

News and Interpretations
FDA • Congress • Identity Standards
Meat Inspection • Court Decisions
USDA Grade Standards • State Legislatures

Will a chemical additive bill be passed this year?

- FDA, chemical, food leaders continue discussions
- Agree on grandfather clause problem
- Priest's death changes committee set-up
- FDA prepares draft of proposed bill

Chemical additive legislation for the new year remains in doubt, but this much is certain: Industry and government are nearer agreement on the outstanding issues than a year ago.

John L. Harvey

Deputy Food & Drug Commissioner John L. Harvey, following discussions with food and chemical industry representatives, told FOOD PROCESSING, "The climate of negotiation has been favorable."

Subsequent to these joint discussions, FDA worked up a "draft bill" that at press time was going the rounds of interested agencies in Washington. Odds were that the White House would approve the FDA-proposed legislation, and that it will be introduced on Capitol Hill. Whether or not the government proposes a specific bill, you can look for officials to take the following position on points at issue with industry:

Usefulness: The government will spell out its previous stand, and take the position that industry need prove "Usefulness" only of additives that may be toxic. "I believe a satisfactory resolution of this issue can be reached," said Mr. Harvey. "We are not concerned with usefulness unless a poisonous or deleterious substance is involved in which case the government should take into account its functional value."

Grandfather clause: A year ago FDA took the position that any new additive legislation should take effect one year after enactment into law, with the government authorized to extend that time for an additional two years in the case of individual products, same procedure as with pesticide legislation.

FDA officials now express the view that a grandfather clause, as such, won't be necessary. Feeling is that both industry and the public can be pro-

tected by a combination of 1) definition, and 2) period of grace.

Employing this approach, any additive already "cleared" either formally or informally by the FDA could be used as usual, but otherwise not. Where a question as to safety existed, legislation could be so written that a product need not be automatically declared contraband, said Mr. Harvey, but would be given an adjustment period.

Declaratory judgments: This is the really serious remaining point at issue between government and industry. Officials have shown no inclination to alter their position that the administrative process is the preferable method of obtaining "correct scientific judgment on perplexing questions of safety to man of chemicals in his food . . ." Nor had food and chemical industry leaders, at press time, publicly changed their position that disputes over safety of additives should be settled by declaratory judgments. Decision in such a judgment has the force and finality of that in a regular lawsuit. The difference is that the request for a declaratory judgment is brought in advance of injury, and the court is asked to decide which of the parties involved is correct.

The declaratory judgment procedure, say government lawyers, as outlined in legislation proposed

last year, would require the government "to initiate and carry through a lawsuit to establish whether or not the new food additive had been adequately tested and thereby shown safe . . .

"And if the chemical manufacturer won," the lawyers ask, "could food manufacturers and processors properly rely on a judgment that did not apply to them as parties to the litigation?"

Representatives of the judiciary support the government view on declaratory judgments. The US Judicial Conference is on record with a resolution in opposition to delegation to the courts of administrative rulemaking on matters of science.

FDA will not oppose one likely provision of new additive legislation that is being given strong support by the food industry. That is a provision that would allow use, in harmless amounts, of toxic chemicals. The present rule flatly prohibits un-

(Continued on next page)

Clarity Measurements in Filtration

by Paul W. Leppla, *Technical Director*

Filtration efficiency is usually measured in terms of flowrate and clarity. Flowrate is readily measured in most plants; however, clarity measurements involve the most difficult aspects of filtration technology. Consequently most industries rely upon visual evaluation of filtrate clarity, which is only semi-quantitative at best and occasionally is purely subjective.

Critical evaluation of filtrate clarity requires instrumental measurement. A number of satisfactory instruments of U.S. manufacture are available. Some measure transmitted light, a questionable technique since few of these instruments discriminate between bleaching of soluble color and the removal of suspended particulates. The measurement of Tyndall or scattered light is much preferred.

Too, the problem of absolute standards is not yet resolved, resulting in confusion on clarity measurements from one laboratory to another. One instrument company has available a series of calibrated standards, which are claimed to be stable, and at least one technical society is working on the development of absolute reference standards so that identical measurements will be possible in different laboratories.

Under these circumstances, evaluating a series of diatomite filteraids is extremely difficult. While Filteraid A may have 90% of the clarification efficiency of Filteraid B in a raw sugar solution, the relative rating in a pectin system may be only 60%. Moreover, the relative clarification of two filteraids with respect to the same liquid may change markedly depending upon the conditions of the test.

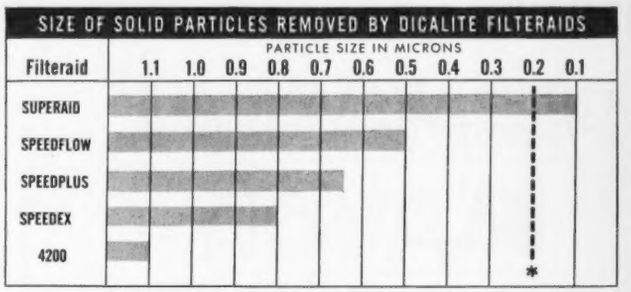
Because of the many variables involved which can influence results to an enormous degree, it is imperative that comparative tests duplicate, as nearly as possible, actual plant conditions. Since often this is difficult, many plants rely on the wealth of experience available to them from a leading supplier in this extremely complex field, experience covering many types of liquors, filters and operating conditions.

The chart in the accompanying advertisement illustrates a significant step forward in this difficult field recently achieved in the Dicalite laboratory. While it is possible to calculate the average pore size of a filter cake, our scientists have known for some time that particles much smaller than the calculated pore diameter are readily retained by diatomite filteraids. By carefully preparing suspensions of uniformly sized particles in the 1-10 micron range, and conducting laboratory filtration tests under carefully controlled conditions, they were able to determine exactly what size particles can be removed by each of the grades of Dicalite filteraids.

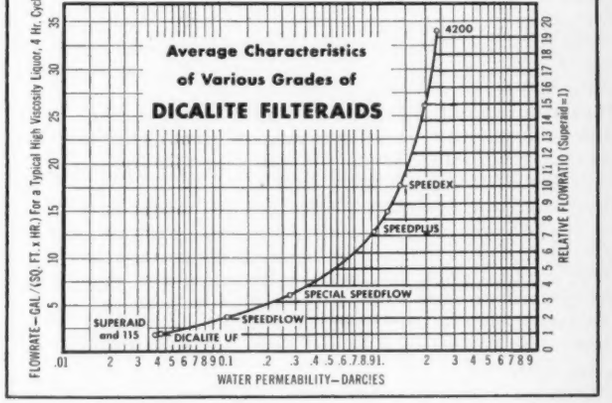
DICALITE FILTERAIDS

let you set "nets" to catch all sizes of "fish"

Of course, there's one fundamental difference between fishing and filtration . . . usually, in filtration you're interested in the filtrate, not the 'fish.' But you still have to set the right size 'net' to get the 'fish' out . . . and Dicalite provides a full range of superior filteraids to do just that. The two charts below show (1) the sizes of particulates trapped by different grades of Dicalite and (2) the flowrates to be expected from these grades in typical filtration applications. These data will give you a clear indication of the Dicalite Filteraids which should provide the optimum balance of clarity and flowrate for your particular operation.



***0.2 MICRON**—Theoretical limit of resolution of optical microscope. Few microscopes achieve it.
80.0 MICRONS—Smallest particle size visible to the unaided eye at 10" distance.



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WRITE TODAY FOR INFORMATION OR TECHNICAL SERVICE ON THE USE OF DICALITE IN YOUR PROCESSING

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Ultra-violet spectrophotometer provided valuable data in the development of Permaseal Flavor Crystals and is used in quality control.

Givaudan sets a New Standard of Quality and Stability with

PERMASEAL® FLAVOR CRYSTALS

Givaudan's new series of Permaseal Flavor Crystals is the result of extensive research conducted to provide you with superior powdered flavors at a new low cost.

They are produced by a special Givaudan-developed cold process that prevents flavor deterioration. Coatings are made of carefully selected materials that protect the freshness of the oils, and are highly soluble.

Here are flavor crystals that offer new and unique advantages for cake mixes, instant icings and frostings, powdered ice cream and sherbet mixes, puddings and pie fillings, gelatin dessert and summer drink powders, and other flavored products sold or transported in powdered form. And because of the flexibility of this new process, Givaudan can custom-make special flavors for your particular needs.

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(Continued from preceding page)

necessary or avoidable poisons in food whether or not they are useful in amounts so small as to involve no health hazard.

Congressional changes: Will congressional hearings on additive legislation go ahead speedily? Perhaps so, but there are complications. One is the death last summer of Rep. J. Percy Priest (D., Tenn.), former chairman of the House Interstate & Commerce Committee and also head of that committee's Health & Science subcommittee which heard witnesses last year on proposed additive bills.

New chairman of the full committee will be Rep. Oren Harris (D., Ark.) who has not previously served on the subcommittee. Capitol Hill sources told FOOD PROCESSING that the likely heir to the subcommittee chairmanship is Rep. Kenneth A. Roberts (D., Ala.). These and other committee changes, says a congressional veteran, "may require hearings that go over a lot of the same ground that was covered last year."

Result could be delay in passage of a bill, even though government and industry reach effective compromises. Summing up, there is a very good chance this new Congress will pass a bill, but the question is whether it can be done during the first session in 1957 or will take until the second session in the following year.

Study relationship of food additives to cancer, Committee urges

A statement on the possible relationships between cancer and food additives has been issued by the Food Protection Committee, Food & Nutrition Board of the National Academy of Sciences-National Research Council. Key passages are these.

"What is *known* concerning a definite relationship between ingestion of a substance and the subsequent development of cancer in man? Accidental repeated ingestion of 'radium paint' or the use of so-called 'radium water' has been followed by the development of cancer of the bone. The ingestion of certain aromatic amines, such as b-naphthylamine or 4-aminodiphenyl, through industrial exposure has been associated with the occurrence of cancer of the bladder. Epidemiologic evidence indicates that a prolonged intake of sufficient arsenic may result in development of cancer of the skin.

"Do these materials occur in the food supply of the United States? Arsenic is the only one. It may occur in some foods in extremely small concentrations as a pesticide residue and is normally present in certain foodstuffs which have recived no pesticide treatment. Insofar as is known, there is no danger from the amount of arsenic likely to be consumed from these sources under ordinary conditions.

"If this were all the story, probably no public appre-

dried

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PRIMARY GROWN

high-protein yeast

In the grade to meet your specific nutritional and pharmaceutical requirements

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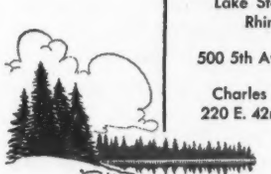


Lake States

Lake States Yeast Corporation • Rhinelander, Wisconsin

Subsidiary of Rhinelander Paper Company

When inquiring check 7011 opposite last page

hension would have arisen.

"Investigators studying cancer have induced the development of tumors in experimental animals by purposely exposing them to a number and variety of chemicals . . . From this evidence and knowledge of how man may be alike or different from the experimental animal . . . the scientist can form a hypothesis as to how man might react to the ingestion of the chemical. In this respect, the conservative position would demand that substances that produce cancer in experimental animals should be excluded from human foods as a precautionary measure, even though it is known that a substance carcinogenic in one species is not necessarily carcinogenic in others.

"Knowledge about possible cancer-causing agents in foods is, in general, at the point that studies are being devised and undertaken to test such possible relationships. This research is, by its very nature, expensive and time consuming. Years of study will be required to build definitive knowledge concerning all causes of cancer. There is a need to continue and expand present efforts to identify any relationships which may exist between environmental factors and the occurrence of cancer in man . . ."

Processors to start notifying FDA of unsanitary RR cars for flour

The FDA has set in motion a plan to determine the extent to which railroads are providing unsanitary cars for flour shipments. Mills are immediately to contact the district Food & Drug offices if any cars they receive fail to meet sanitary standards — the FDA offices will promptly take steps to inspect car. Following operation of this program for a long enough time to determine condition of freight cars, FDA will determine what steps may be necessary under existing law to clean up.

FDA Standards

List of foods for which standards have been established is available from Food & Drug Administration, Washington 25, D.C.

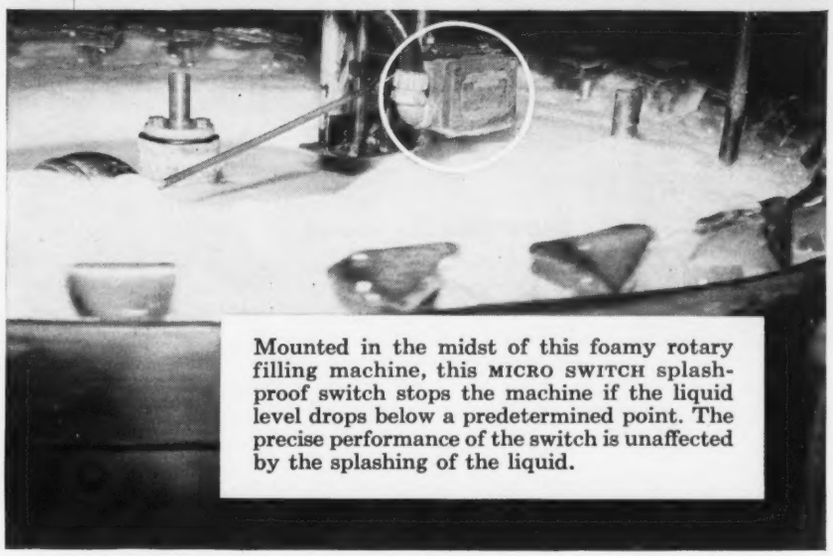
Cheeses: Orders are still pending on proposed standards for ricotta cheese and part-skim ricotta, and also on Samsoe Danish cheese, due to objections having been filed. Hearings on the objections had not yet been scheduled at press time.

Canned Prune Juice: Standards of identity are now in effect, following petition by National Canners Association. The original order, however, did not recognize honey as an optional ingredient, and a hearing is pending as to whether it shall be included in the standards. An exception to the order, meantime allows use of honey in the product.

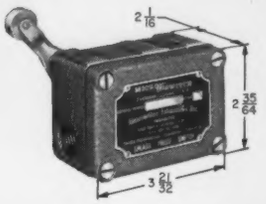
Orange Juice: Time for comment was extended to Jan. 31, 1957, on standards proposed by Kraft for fresh orange juice, which has been stabilized or processed, and reconstituted juice.

(*Continued on next page*)

MICRO SWITCH . . . FIRST IN PRECISION SWITCHING



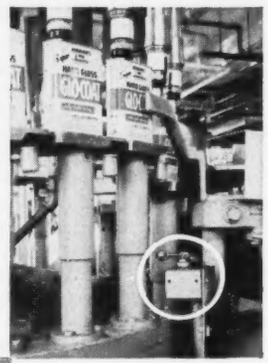
Mounted in the midst of this foamy rotary filling machine, this MICRO SWITCH splash-proof switch stops the machine if the liquid level drops below a predetermined point. The precise performance of the switch is unaffected by the splashing of the liquid.

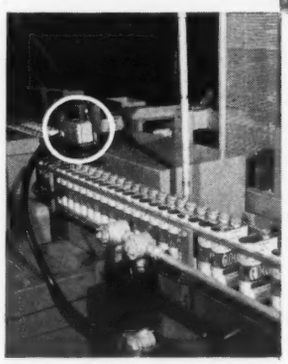


MICRO SWITCH Splash-Proof Switches are constructed to resist the splash of liquids. A seal on the actuating shaft and a gasket on the cover gives a good seal against normal splash conditions. A heavy aluminum housing protects the enclosed switch. These switches combine long electrical life with accurate repeatability. They are available with adjustable roller-arm actuators (shown) or with push-rod plunger actuators. Can be supplied with a variety of electrical ratings and contact arrangements.

Splashed all day with liquid wax...

MICRO SWITCH precision switch is used to prevent "jam up" on a rotary can-filling machine. If the platform sticks and does not lower to the level of the conveyor, the switch stops the conveyor until trouble is corrected.





Switch at the left is held operated by the nozzles of the cans. Should a can be upset, or reversed, the switch actuator releases, opens the circuit and the conveyor stops. Another switch keeps track of the supply of knock-down shipping cases, in a similar manner. It stops the conveyor if the supply is low.

MICRO SWITCH Precision Switch performance is unaffected

MICRO SWITCH offers a complete line of splash-proof and explosion-proof switches to meet requirements of food and chemical processing plants. Thousands of plant superintendents, electricians, maintenance men have made their equipment more automatic, more productive and safer with the use of these precision switches.

Johnson's Wax Company engineers chose splash-proof MICRO SWITCH precision switches to control packing equipment in their modern Racine plant. From controlling the level of the rotary filling machine, through every packaging step, MICRO SWITCH units insure safe, efficient operation as over 200 cans are filled in each line per minute.

See the MICRO SWITCH distributor near you. Look under "Switches, Electric" in the Yellow Pages.

See MICRO SWITCH Catalog No. 83 for complete information on the wide line of heavy-duty precision switches for industrial use. Wire today.

MICRO SWITCH
A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY
In Canada, Leaside, Toronto 17, Ontario • FREEPORT, ILLINOIS

When inquiring check 7012 opposite last page

Try a sample of this wholesome emulsifier

It's DPi's Myverol® Distilled Monoglycerides. And it's not only an excellent emulsifier, but a wholesome food as well.

Made from your choice of natural fats and oils and purified by molecular distillation, it contains at least 90% monoglycerides—is largely freed of diglycerides and other extraneous materials. The product is homogenized with nitrogen to produce a smooth, white cream of dependable uniformity.

Useful for baked goods, shortening, margarine, peanut butter, dessert toppings, and other food products, Myverol Distilled Monoglycerides are available in whatever quantities you require. We shall be pleased to send you a selection of samples for your investigation. Just write *Distillation Products Industries,* Rochester 3, N. Y. Sales offices: New York, Chicago, and Memphis • W. M. Gillies and Company, Los Angeles, Portland, and San Francisco • Charles Albert Smith Limited, Montreal and Toronto.

distillers of monoglycerides made from natural fats and oils

DPi

Also . . . vitamin A in bulk for foods and pharmaceuticals

Distillation Products Industries
is a division of **Eastman Kodak Company**

When inquiring check 7013 opposite last page

food regulations

(Continued from preceding page)

Canned Tuna: Officials expected proposed standards to take effect about now in line with petition of National Canners Association and 21 packers.

Frozen Raw Breaded Shrimp: Proposed identity and grade standards are still under study. Final order may be some time away.

USDA Grade Standards

Checklist of new or proposed grade standards issued by USDA follows. Except where noted, complete texts can be secured from US Department of Agriculture, Washington 25, D.C.

Canned Okra: Proposed revision of standards, in effect since 1933, provides for two types of canned okra. Type I would be that which has partially fermented before processing; Type II that which has been processed without fermentation. There is provision for whole salad style consisting of whole pods with stems attached, in addition to whole and cut styles. Fill-of-container is redefined and a method outlined for determining compliance with minimum drained weight recommendations. Such recommendations are also provided for additional container sizes now in general use. Clearness of liquor and flavor are deleted as factors rated by score points. Flavor provisions are included in the definition of normal flavor. Condition of liquor is considered in relation to maturity of pods and type. Factors of color, size, defects and character are redefined. Grades proposed are US Grade A or Fancy, US Grade C or Standard, and Substandard. Views and comments are due Jan. 14.

Frozen Concentrated Grapefruit Juice: Revision of standards took effect Dec. 29, 1956, designed to improve quality by narrowing the permitted ranges of Brix-acid ratios; adding upper and lower limits for recoverable oil in Grade A, and realignment of score points.

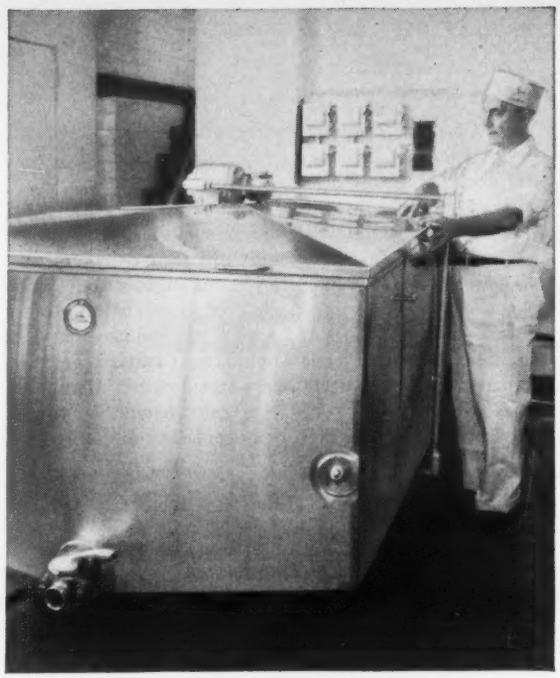
Sugarcane Syrup: Proposed revision provides for evaluation of weighted factors on a point basis in determining quality; recommends minimum ash content; classifies color by official permanent glass color standards. Comment was due by Dec. 26.

Poultry: Proposed amendment to federal grading and inspection service would; 1) require removal of kidneys before poultry may be described as ready-to-cook; 2) require that licensed graders be federal or state employes; 3) allow use of limited-licensed graders when under the immediate supervision of a licensed grader; 4) list specific acts on the part of service employes that would be grounds for denial of service. Comments were due Dec. 26.

Export Grain: Revision in fees and charges for appeal inspection of export grain took effect on Dec. 1. A charge of $5 per man-hour is now being made for overtime of employes handling appeal, in addition to the regular charge of $1.50 per 1000 bushels for export appeal inspection.

Breaded Meat Products: Effective last Dec. 1, the amount of batter and breading used as a coating may not exceed 30% of the weight of the finished breaded product on such products as breaded ham and beef sticks, breaded beef steaks, breaded chopped pork steaks, and veal steaks, breaded veal cutlets, and the like. Ingredients of the batter and breading, according to the order, should be shown in an accompanying statement.

Apricots: Standards were published in codified form in the Dec. 13, 1956, issue of the *Federal Register,* the format being changed to conform with this publication's regulations. No change in standards themselves is involved, and they continue in effect as originally issued May 25, 1928.



Put yourself in his shoes

Matter of fact, that's not a bad place to be. For when you stand beside a Cherry-Burrell "Kold Vat" you're in a position to do so *many* things . . . to so *many* products . . with one stainless steel rectangular vat.

For example, you can use the heavily insulated "Kold Vat" for space-saving storage of raw or finished products . . . as a surge vat or for complete mixing without whipping or beating.

And with a "Kold Vat" you can quickly heat or cool almost any liquid or semiliquid product. Cherry-Burrell's exclusive enclosed channel wall surface assures rapid, effective heat transfer . . . with steam, hot water, cold water, "Freon," ammonia or some other refrigerant.

"Kold Vat's" square shape not only helps you pack *more* product into *less* space, but also leads to low rail height for easy dumping, observation and cleaning.

Your Cherry-Burrell Representative can give you complete dimension data on every tank from 150 to 1000 gallons. Call him or write for bulletin.

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Dairy • Food • Farm • Beverage • Brewing • Chemical • Equipment and Supplies

SALES AND SERVICE IN 58 CITIES — U.S. AND CANADA

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SPOTLIGHT ON PLANTS, COMPANIES, PERSONALITIES

Post of plant superintendent at Food Machinery & Chemical Corp.'s canning machinery div. plant at Hoopeston, goes to **Marion O. Smith,** former chief application engineer.

S&W Fine Foods announces appointment of **Irving Manning** to manager of its coffee department.

A new extract and essential oil firm, Quintessence Laboratories, opens at 6 Varick St., New York City, 13. Firm will offer full line of flavoring extracts, essential oils, true fruit and artificial flavors, aromatic chemicals, certified colors. Heading up firm is **Dr. Norman Larsen.**

New staff member at A. D. Little's Flavor Lab is **Dr. Edward E. Anderson,** coming from University of Massachusetts, where he was associate professor of food technology.

Dr. Edward E. Anderson

Joseph H. Bagley

At Gerber's, Joseph H. Bagley moves to vice president in charge of marketing, succeeding retiring **Earle Johnson. Fred Yeakey** moves into the general sales manager slot vacated by Bagley.

From Consolidated Foods: Appointment of **H. E. Woodford** as president of subsidiary company **Consolidated Food Processors, Inc.** Woodford was formerly a marketing consultant and executive vice president of **Perkins Products Co. Lawrence Spatz** is named controller of central distributing division. And Consolidated terminates their rice operation with sale of **Rosenberg Bros. & Co. to Rich Growers Association of California.**

Construction will begin next June on a $7½ million radiation center at Stockton, Calif., devoted to experimentation on preservation of food by radiation ionization.

Changes at Crown Zellerbach: With appointment of former president **J. D. Zellerbach** as U.S. ambassador to Italy, **H. L. Zellerbach** becomes chairman of the board's executive committee, **A. B. Layton** moves to president, and **R. O. Hunt** to executive vice president. The new ambassador will be chairman of the board.

(Continued on next page)

MAKES THE TASTE BUDS TINGLE just to look at these eye-filling gelatin dessert delicacies. But *sight appeal* is not enough; your easy-to-prepare dessert products must also possess *luscious, lively flavors* if they are to convert first-time buyers into steady, *repeat* customers for your particular brand . . . FRITZSCHE offers an incomparable selection of fine flavors specially developed for various types of food, beverage and dessert products . . . also the experience and facilities for handling individual flavoring problems that demand special laboratory attention. Remember: *Your product is* ONLY *as good as its* FLAVOR!

For helpful suggestions, direct your special flavoring problems to our Flavor Division, Dept. FP.

FRITZSCHE *Established* 1871
Brothers, Inc.
PORT AUTHORITY BUILDING, 76 NINTH AVENUE, NEW YORK 11, N. Y.
BRANCH OFFICES *and* *STOCKS: *Atlanta, Georgia, Boston, Massachusetts, *Chicago, Illinois, Cincinnati Ohio, *Los Angeles, California, Philadelphia, Pennsylvania, San Francisco, California, St. Louis, Missouri Montreal and *Toronto, Canada and *Mexico, D. F. FACTORY: Clifton, N. J.

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A look into the versatile abilities of Takamine Enzymes will help in the final analysis of your products at the market-place.

If you are plagued with processing or stability problems involving starches, pectins, proteins, glucose (browning reaction) or oxidative changes, Takamine Enzymes will speed operations, control viscosity, enhance flavor and taste and improve storage stability.

Takamine Enzymes serve you in *two ways* — they promote smooth processing operations *and* give your product a *selling personality*.

Send for our complete technical bulletins regarding your product or problem. Please address inquiries to our Technical Service Department.

Takamine Enzymes make it taste better, look better, sell better

DIASTASES
for liquefaction and hydrolysis of starch to produce soluble dextrins and sugars—also, to remove starch causing filtration problems and turbidity.

GLUCOSE-OXIDASE
to prevent browning due to glucose or oxygen and to increase shelf-life of food and beverage products.

PROTEINASES
for the modification and hydrolysis of proteins in food manufacturing and pharmaceutical operations.

PECTIC ENZYMES
for the hydrolysis of pectins in fruit and fruit juices to speed processing and to make fruit juices sparkling clear for consumer appeal.

TAKAMINE

TAKAMINE LABORATORY
DIVISION OF MILES LABORATORIES, INC.
CLIFTON • NEW JERSEY

When inquiring check 7016 opposite last page

plants, companies, personalities

(Continued from preceding page)

According to survey conducted by management consultant firm **McKinsey & Co.**, food executives as a group earned almost 1% less in 1955 than in 1954, compared to an average increase of 6.3% for industry in general.

General Mills

New corporate symbol for **General Mills** is result of much study—concluding that the word **"Mills"** is more distinctive and descriptive than **"General"**. Hence the emphasis on the former word. The TV-screen shape provides "an outline fitted physically to the name".

E. A. Geoghegan has been named president of **Wesson Oil & Snowdrift Co., Inc.**

New slate at Sunkist Growers, following retirement of general manager **Paul Armstrong: F. R. Wilcox** is now general manager; **D. M. Anderson,** assistant general manager and secretary; **M. D. Street,** treasurer.

Foxboro Co. will hold its third annual forum on instrumentation in the food industries on March 18, 19, 20 at Foxboro, Mass. No charge is made for the sessions, intended to provide exchange of ideas and information between Foxboro engineers and instrument users.

Hugh Daley, Fleet Supervisor for Beatrice Foods' Idaho Creameries Division, is shown at right receiving National Safety Council's 1st place award for driver safety performance. The company's trucks operated for one full year, driving 1,125,000 miles, with only one accident. Presenting the award is E. G. Cox of Interstate Commerce Commission, at left

EXPANSIONS — MERGERS

Pecheur Lozenge Co., makers of candies and lozenges, has been sold to **F. Barry Haskett** . . . . . **Bachman Bakeries Corp.**, leading pretzel makers, becomes a division of **George W. Helme Co., Inc.**, tobacco product manufacturer . . . . . **Beatrice Foods** has acquired **Associated Dairy Products Co.**, of Glendale, Ariz. . .

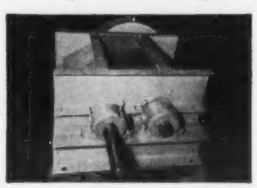
Cook Chocolate Co. announces plans for new $1 million plant adjacent to present plant in Chicago . . . . . **Certi-Fresh Foods** has completed its new 12,000 sq ft addition for frozen fish stick production in Los Angeles . . . . . **Kraft Foods Co.** has purchased parcel of land near Lakeland, Florida, to be site of truck terminal and feed mill.

"Since 1885"

GRUENDLER QUALITY IS THE BEST THAT MONEY WILL BUY

Shredders, Mixers, Pulverizers *for* Processing

Units for Grinding and blending all kinds of food products. A wide range of capacities and powers.



SAW TOOTH SHREDDER
Organic or raw materials, including BARK, STRAW, WOOD, CORK.

DOUBLE SHAFT CONTINUOUS MIXERS
For pugging or intensive blending of dry mixes or wet slurries.

LARGE SCALE CENTER FEED PULVERIZERS
Organic or inorganic compounds. High capacities. Available with integral feeding devices to handle a wide variety of feeds, with Automatic Controls for particle sizing — 10 mesh to 100 mesh.

Write Dept. FP-1-57 for BULLETINS

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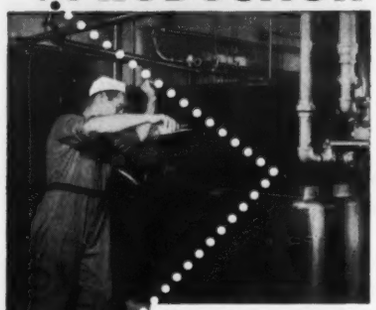
BOOST PRODUCTION



"Fudgsicle" processor prevents foam, minimizes rejects with Antifoam AF Emulsion.

stop waste with a Silicone Defoamer

YOU KILL FOAM FAST, increase productivity, stop wasteful and unsanitary boil-overs or spillage when you use a Dow Corning Silicone Defoamer. Physiologically harmless, water dilutable Antifoam AF Emulsion may be used in processing nonstandardized foods at concentrations up to 34 ppm; Antifoam A Compound up to 10 ppm.

Effective in remarkably low concentrations, Dow Corning Silicone Defoamers are the most versatile and economical foam killers ever developed for food processors.

For example—

In Chocolate Syrup
1 oz Antifoam AF per 2075 lb.

In Dill Pickling Solution
1 oz Antifoam AF per 15,625 lb.

In Vitamin B2
1 oz Antifoam A per 35,000 lb.

In Chewing Gum Base
1 oz Antifoam A per 20,833 lb.

Free Sample—*make your own test — send coupon today*

DOW CORNING SILICONES

Dow Corning Corporation
Midland, Mich., Dept. 5713

Please send me:
FREE sample of ☐ Antifoam A Compound
☐ Antifoam A or ☐ AF Emulsion;
☐ Booklet on Silicone Defoamers.

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COMPANY _____
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plants, companies, personalities

Nestle Co. has begun construction of its new American headquarters at White Plains, N.Y. . . . . Arthur D. Little announces plans to expand present facilities at Acorn Park in West Cambridge, Mass., and purchase of 170 acres in Concord for future expansion . . . . . American Can has started work on new steelplate and tinplate plant at Hammond, Ind. . .

Rockwood & Co., chocolate product maker, merges with Selby Shoe Co. . . . . Roselli's Pure Foods, Inc., becomes wholly-owned subsidiary of Prince Macaroni Manufacturing Co. . . . . Fremont Kraut Co., has purchased the J. Weller Co. Kraut factory in Clay, N.Y. . .

Jan. 28-31. Plant Maintenance & Engineering Show and Conference, Public Auditorium, Cleveland, Ohio.

Jan. 30-*Feb.* 1. Private Truck Council of America, Inc., Annual Convention, Sheraton-Jefferson Hotel, St. Louis, Missouri.

Feb. 4-6. Conference for Fieldmen and Processors, Kellogg Center, Michigan State University, East Lansing, Mich. (Dates for other canner's and fieldmen's short courses and conferences appear on page 79.)

Feb. 12-14. Technical School for Pickle Manufacturers, Kellogg Center, Michigan State University, East Lansing, Michigan.

Feb. 14. Dairy Products Improvement Institute, Inc., Annual Meeting, Hotel Statler, New York City.

Feb. 15-17. American Poultry Industries, Fact Finding Conference, Municipal Auditorium, Kansas City, Mo.

Feb. 16-19. National Canners Association, 50th Annual Convention together with C.M.&S.A. and N.F.B.A., Hotel Hilton, Chicago, Ill.

Feb. 21-22. Peanut Research Conference, Biltmore Hotel, Atlanta, Ga.

Feb. 23-28. U. S. Brewers Foundation, Fairmont and Mark Hopkins Hotels, San Francisco, Calif.

Feb. 25-*Mar.* 1. International Heating & Air Conditioning Exposition, International Amphitheatre, Chicago, Ill.

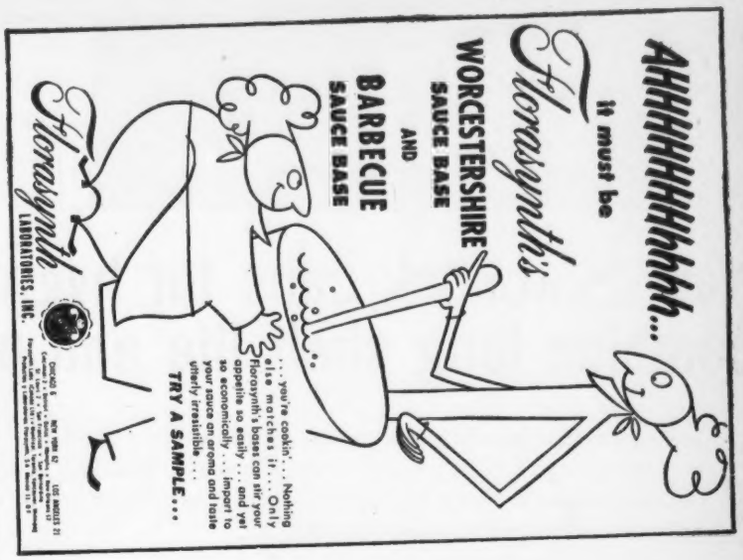
Feb. 26-27. National Dairy Engineering Conference, Kellogg Center, Michigan State University, East Lansing, Michigan.

Mar. 4-7. American Society of Bakery Engineers, 33rd Annual Meeting, Edgewater Beach Hotel, Chicago, Ill.

Apr. 8-11. AMA Packaging Exposition, International Amphitheatre, Chicago, Ill.

Apr. 23-25. Research and Development Associates, Food and Container Institute, Annual Meeting, Richmond, Va.

Apr. 23-25. Seventh National Conference of Interstate Milk Shipments, Peabody Hotel, Memphis, Tenn.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it must be
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WORCESTERSHIRE SAUCE BASE
AND
BARBECUE SAUCE BASE
...you're cookin'... Nothing else matches it... Only Florasynth's bases can stir your appetite so easily... and yet so economically... impart to your sauce an aroma and taste utterly irresistible...
TRY A SAMPLE...
Florasynth LABORATORIES, INC.

"ENTRAPPED"
KEEPS FLAVOR IN
Florasynth's Entrapped Powdered Flavors keep the flavor characteristics so alive, so fresh... provide instant solubility in cold water... complete dispersability within the mix... definitely longer shelf-life. Available for prompt shipment in wide flavor selection...
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...a product which through the years has been the standard, the perfect imitation Maple Flavor Base... Check its amazing consistency and you can appreciate it has never changed from its premium quality... Most economical for manufacturing purposes...
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CONTINENTAL *Landmarks*

Periodic progress reports of interest and value to the packing field

New Savorlock cans for hygroscopic products combine long shelf life and positive reseal

Intended to spur impulse sales of instant coffee and other "hard-to-hold" products, Continental's newly announced Savorlock cans are believed to be the first of their category to be made on high-speed lines for maximum economy.

Eye appeal is provided by brilliant lithography, plus unusual package proportions, established on the recommendation of a well-known industrial designing firm. The two sizes — 204 x 315 and 305 x 507 — are pleasing in appearance, while getting as many units as possible into each running foot of shelf space. Additionally, the lightweight cans stack securely.

Intensive store evaluations show no appreciable moisture pickup four months after stocking. After tamper-proof glassine inner seal is broken, the lock top gives a positive reseal in day-to-day home use.

Supermarket time studies reveal it takes a shopper an average of 4 seconds to choose an item from a grocery shelf. New Savorlock cans, in 2 and 6-oz. capacity, are specifically designed for today's impulse buying.

PERTINENT DATA ON THE NEW Savorlock CANS

The full opening and positive resealing features recommend Savorlock for almost any powdered or granulated product, food or non-food. Evaluations have been confined to instant coffee as being one of the most hygroscopic of food products now marketed. Other products for which tests can be arranged include:

- Soluble tea and tea bags
- Chocolate and cocoa
- Non-fat dry milk
- Dehydrated soups
- Prepared chocolate mix
- Baking powder and soda
- Spices
- Vegetable flakes
- Brown and confectionery sugar
- Peanut butter
- Pharmaceuticals
- Laundry starch, bleach

Also instant gravy mix, bouillon cubes, powdered egg whites, dry coconut, prepared dips for fried foods, bread crumbs, hard candy, cookies, dessert powders, dry rice, instant potatoes, etc.

CONTINENTAL CAN COMPANY

Eastern Division: 100 E. 42nd St., New York 17
Central Division: 135 So. La Salle St., Chicago 3
Pacific Division: Russ Building, San Francisco 4
Canadian Division: 5595 Pare St., Montreal, Que.

When inquiring check 7020 opposite last page

ASSOCIATION NEWS

Trade Associations
Technical Societies
Colleges

NCA and CMSA mark golden anniversary at coming canners show

"The Golden Age of Canning" will be theme of upcoming canners show, to be held February 16-19 at the Conrad Hilton in Chicago, as both National Canners Association and Canning Machinery & Supplies Association celebrate their 50th anniversaries. The exhibit, sponsored by CMSA, will include some 2½ acres of booths, occupied by 121 firms. The NCA program will include commemorative addresses, a banquet, special spotlighting of industry leaders, and other events. National Food Brokers Association will also convene coincidentally, as is its annual practice.

National Safety Council reports its new general chairman of the executive committee, commercial vehicle section, is **Kenneth N. Beadle,** director of safety at Pacific Intermountain Express, Inc.

B. S. Schweigert

D. M. Doty

C. F. Niven, Jr.

New lineup at American Meat Institute Foundation, made necessary by passing of former director, **Dr. Henry Kraybill: Dr. Bernard S. Schweigert** is now director, **Drs. Delbert M. Doty and Charles F. Niven, Jr.** are associate directors.

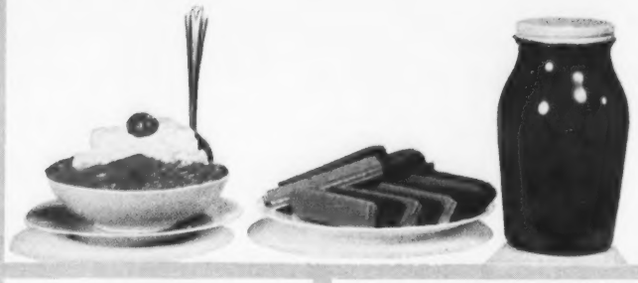
This year's Kimble Methodology Research Award, sponsored by Kimble Glass Co. (Subsidiary of Owens-Illinois), goes to **Drs. Philip Edwards** and **William Ewing,** both of **US Public Health Service,** for their development of techniques to speed up identification of food poisoning bacteria.

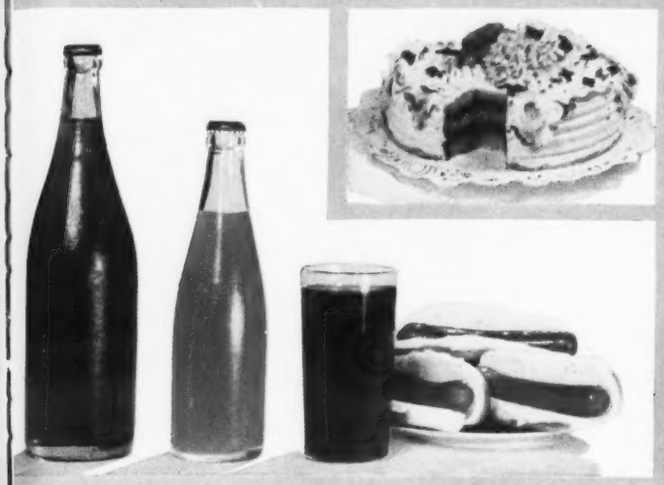
Three-day Fact-Finding Conference will be held in Kansas City, Mo., by **Institute Of American Poultry Industries,** February 15, 16, 17. Topics under discussion will include refrigeration, research and new ideas, marketing and merchandising, management, and "outlook".

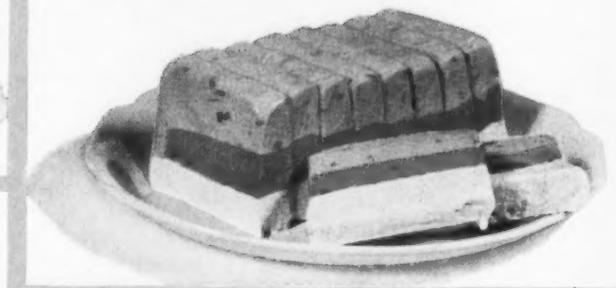
New "Food Processing Institute of Norway", financed largely with US help and located in Oslo, has made significant technical progress with development of new

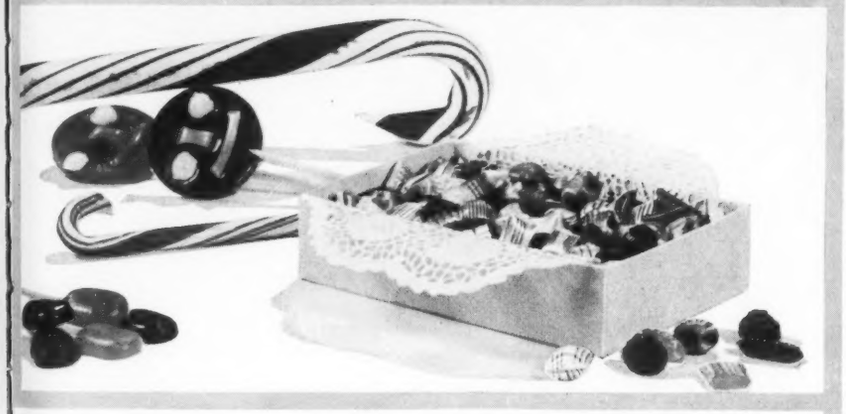
For more information on product at right, specify 7021 . . . see information request blank opposite last page.

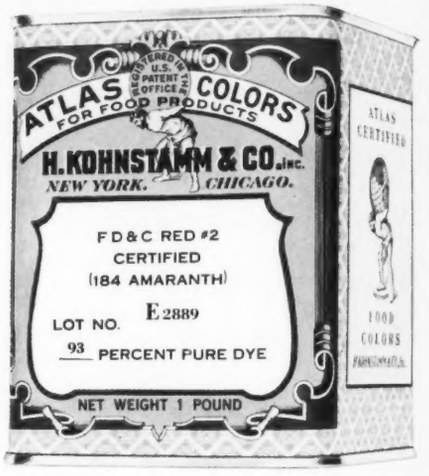
FOOD NEEDS COLOR











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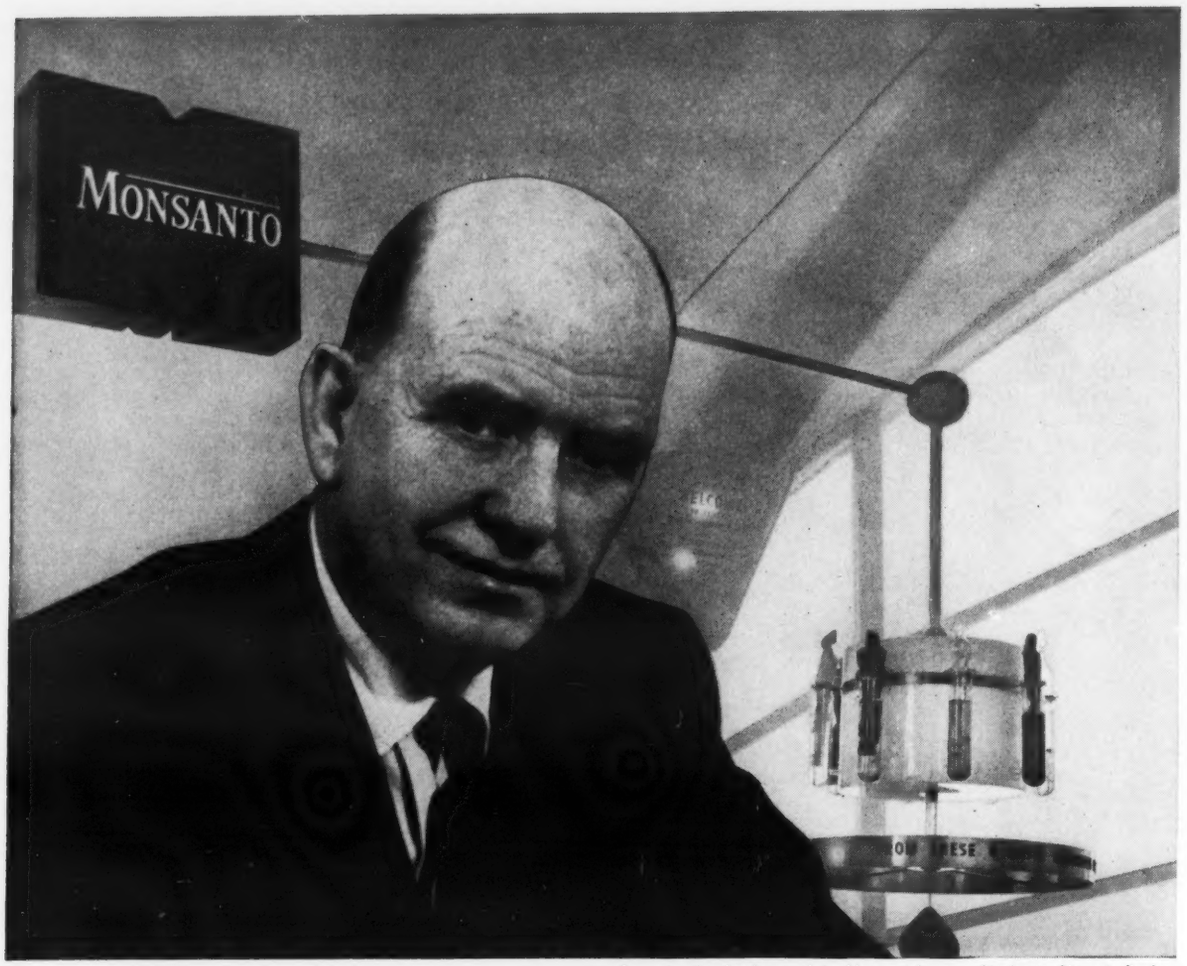

Seen in the background is Monsanto's new St. Louis Airport display.

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"Our business is so diverse," continues Mr. Thomas, "that it would be impossible to keep abreast of shifting market needs without the help of business publications. Our top executives – and our down-the-line people, too – consider business publication reading a necessary routine."

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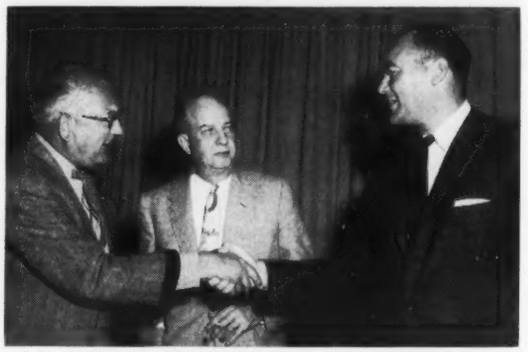
canning techniques (principally for sardines), better packaging materials, and improved smoking and dehydration methods. Projects now under study include new food products, color retention, dietary foods, animal foods, automatic packaging methods, material handling.

Association of Food Industry Sanitarians met in Monterey, Calif., recently, re-elected as president **Prescott R. Lloyd** of C & H Sugar. Also re-elected were veep **Clayton Baldwin** and executive secretary-treasurer **Paul Laughlin.**



Prominent among speakers at recent meeting of Glass Container Manufacturers Assn. in Phoenix was John M. Fox (right), Minute Maid prexy. He's shown here with Fred Fuller, GCMI general counsel (left), and S. B. DeMerell, GCMI president

Processed Apples Institute reports that market for apple products is "one of the steadiest that the industry has known for a number of years". In 1956 apple products moved ahead 5% over 1955, today rank second to peaches among canned fruit.

New president of Conveyor Equipment Manufacturers Association is **J. H. Walker** of Fairfield Engineering Co.

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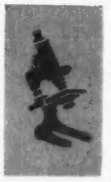

So's our PURE COFFEE PASTE 190. This famous coffee paste also retains 100% flavor . . . wherever minimum moisture content and easy dispersability are a *must.* That's why it is perfect for hard candies and caramels.

But the proof's in the eating. You see more and more customers come back to you . . . again and again . . . for *more* ice cream . . . *more* cakes . . . *more* candies . . . *more* of all foods where that just-brewed aroma and flavor of real coffee is so widely desired. *That's* in it for you.

What's in it for *us?* We are now the nation's No. 1 producer of pure coffee flavors. *You* did it!

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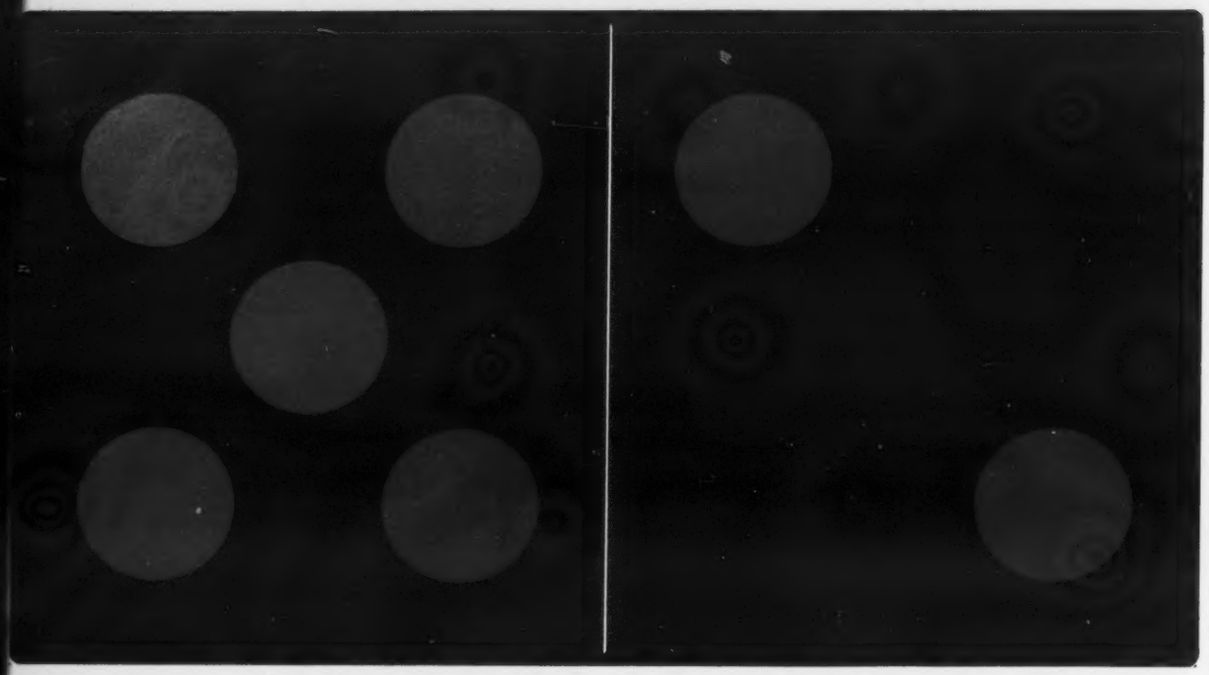

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What's stirring in the food industry

There's plenty of action going on in the food industry these days. Successful processors have learned that there is no standing still . . . when you're through changing you're through!

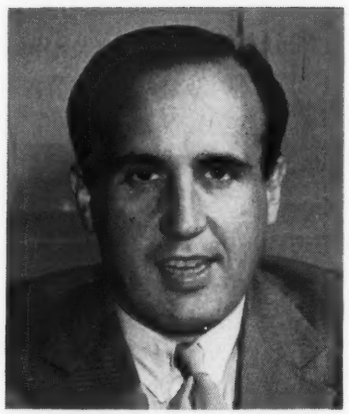
Today's views of food industry leaders reflect an increased tempo of progress. If they did not they would not be leaders nor remain as leaders very long.

It is therefore of value to all concerned with the food industry to know just what the immediate objectives of these leaders are for the coming year. With this in mind, Bruce Fader, editor of our associate publication, FOOD BUSINESS, asked leading food executives the question: "If your organization could achieve one, and only one, major objective for 1957, what would it be?" Six of the commentaries received by him were judged to be of exceptional interest to the readers of FOOD PROCESSING and are presented beginning on the opposite page.

THE EDITORS

Industry leaders present

MAJOR OBJECTIVES FOR 1957



H. J. HEINZ
President
H. J. Heinz Co.

Alert all levels of management to changes in consumer demands

The major objective of the H. J. Heinz Company for 1957 is clear and unmistakeable — the creation of an awareness in all levels of management that they are working in an industry whose character is changing more swiftly than any of us could have dreamed five years ago.

There was a time when food processing moved along well-trod paths. The current year's goals then were likely to be very much like the goals of the year previous or, for that matter, the goals of ten years before.

Not so today. Our market is today growing at an ever-accelerating rate. The consumer palate is ever more discriminating: it demands better-tasting, more nutritious, and more varied foods. And consumers are seeking more convenience foods which save preparation and serving time. Furthermore, changes in the food distribution system are sparked by constant search for greater efficiency and lower costs.

Even in an old established food line like pickles, we are continually developing new varieties. Some varieties which have been national best sellers in their fields for many decades have given way to new ones. For instance, four years ago, we introduced two new pickle relishes. Today those two new relishes — only four years old — are the biggest sellers in our pickle line. In candor, we at Heinz must confess to some astonishing developments of this nature.

Or take the case of family-size packages. Introduction of these packages in the lines of our long-established varieties is now exceeding all former sales attainment as they were developed for the convenience of the larger family. At their present rate of sales growth, these family-size packages are still far from their actual potential.

But do these and similar developments mean that consumers merely want change for change's sake? Are they deserting old established favorites?

Not necessarily, for we find that our Ketchup, whose recipe has changed not-at-all and whose package has changed very little in many years, is currently making the greatest sales strides in its history.

This altering of established patterns of doing business is not confined to the processor. The president of one long-established retail food chain recently told me that 82 percent of his business is now done in the suburban stores which he has opened in the past five years, to keep pace with today's move to suburban living.

And so in the year of 1957 — an especially significant one for us of the House of 57 — our foremost objective must be alertness to change.

It is perhaps significant that we plan in 1957 to dedicate our new Heinz Research Center at Pittsburgh. This will serve as the headquarters for Research and Quality Control activities of our entire international organization. From this Research Center, we believe, will come many developments for improving our established products and for developing new products for our world-wide organization.

The will to explore and to adapt calls for imagination and courage throughout our organization — and with this will at all levels we shall be prepared to move along the new paths, wherever they may lead us.

(Continued on next page)

HAROLD W. COMFORT
President
Borden Company

"Precinct planning" — a new concept for company operation

If the Borden Company could achieve one, and only one, major objective in 1957, I would like it to be what I have come to call "precinct planning". This is the technique used by our major political parties. It has been adopted with great effect by our social organizations, particularly in their fund drives. To my knowledge, this technique has never been put to use on the corporate level.

Organizationally, the Borden Company is particularly well-suited for precinct planning. And the next twelve months, the year of our hundredth anniversary, is the ideal period for us in which to make the change.

The Company has more than 700 business locations throughout the United States alone, most of them fluid milk and ice cream plants. Because of the local nature of the fluid milk and ice cream business, the managers of these plants must of necessity make many of their own decisions and set many of their own policies, based on their knowledge of local conditions.

Carrying through the political analogy, we have within Borden's an already-established, strong "precinct" organization. No change in corporate philosophy is required to put precinct planning to work.

Precinct planning consists of fully utilizing the specialized skills and experience — personal as well as business — of *each* of the Company's 33,000 employes. Each dollar of our $145,000,000 annual payroll is well spent. But at the same time, I think that until now we have failed to tap a large reserve of enthusiasm and energy among employes; we have failed to benefit from the team spirit that exists among small groups having common interests.

In the past — for some two decades, now — we have benefited from the specialized knowledge of our plant managers about local conditions. The national company has gained from the combined efforts of individual managers to build the prestige and importance of their plants in their respective communities.

The managers, in turn, have earned increased recognition within their communities in areas far outside the business field; they have the satisfaction that comes with responibility and with the knowledge that their ideas are listened to and put to work.

If this approach at the managerial level works so well, why not extend it to the basic element, the individual employe? I am convinced that any person competent enough to be hired by a company can offer suggestions and constructive criticism that will improve the efficiency of an entire organization.

I realize that employe suggestion programs have been instituted by a number of firms with gratifying results. But precinct planning has advantages over suggestion programs: It fosters teamwork while retaining individuality; it cultivates what might be called the human element, in the sense that it recognizes the complexity of a person's makeup; it translates an employe's efforts into terms of his own interest.

We have already begun precinct planning on a "pilot" basis at two of our plants and the results have been excellent. It is my hope that it can be extended to all our plants with equal success during our Centennial year. If so, I have no doubt that sales, earnings and productivity will reach new high levels, and that the first year of Borden's second century will be the best in the Company's history.

CHARLES P. McCORMICK
President
McCormick & Co., Inc.

To help the homemaker prepare more unusual foods

The trends and predictions since the election seem still to foreshadow another good year in 1957 with more highly competitive conditions. Our experience has proved to us that research will pay off more next year than in any previous year in history.

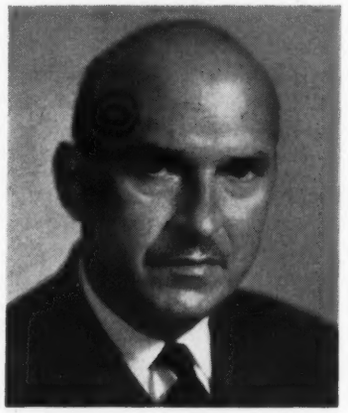
By research we mean the all inclusive study in the laboratory, and the analytical skills that are used to produce new products, new flavors, and new foods which will add zest to the American Housewife's table. We also mean research in the market place and in the home to find out if new products are needed, wanted and enthusiastically accepted.

At McCormick and Company we have been blazing the trail on many marvelous delicate flavors. Results obtained from our experimental food kitchen and consumer testing have proved that this urge for new flavoring products

is permanent and not temporary; therefore, we shall continue to work on sauces, spreads, concentrates, liquids, powders, and pastes in order to find the most delectable new products for Mrs. Housewife's table.

We believe our major role in 1957, as members of the spice and flavoring trade, is to provide the amateur and professional cook with a product in finished form which will enable her to easily prepare the unusual dishes her family has grown to enjoy. These new combinations and blends of spices and flavorings will assist even the novice to prepare recipes which heretofore were only attempted by the more experienced cooks who knew exactly how to blend and combine various proportions of different spices and flavorings.

By advancing these new products, we hope to catch the housewife's eye and satisfy her palate which will give us an extra lift in sales, over and above the expected normal business pattern.



NATHAN CUMMINGS
Chairman
Consolidated Foods Corp.

Plan for tomorrow by developing people

Our company's major objective in 1957 will be building up human reserves as accountants build up asset reserves. We are determined to plan ahead for tomorrow by developing people for business leadership today.

The subject of management development is demanding universal attention for many reasons:

- Many companies are finding themselves critically short of well trained personnel
- The job of professional business management has become very demanding
- The implications of an automated society have forced self-appraisal on the part of businessmen
- Management has become more aware of its long-term social and economic responsibilities

Regardless of size of operation, our managers have found the most effective way of providing for growth and development of personnel is through systematic coaching of individuals by their immediate superiors. Most people need help in order to learn and grow.

We have also found that a continuing program of management development must be based on a careful examination of the existing organization structure. Sound organization is the necessary framework for long-range management development. Organization planning forces executives to analyze their individual objectives, responsibilities and authorities.

Most important, organizational planning forces administrators to agree that development of human resources is essential if a company is to realize its full potential in future years.

Many of our programs of management development are comparatively young. And most of their potential benefits are yet to be realized. But, formal or informal, most of our programs have these goals: First, to improve the performance of present management. Second, to insure adequate trained reserves.

Usually every company has some form of informal development program. One of the oldest and least productive is the one in which subordinates ape the ideas and habits of their superiors. If superiors are vulnerable to this form of flattery, their subordinates soon become carbon copies of their leaders.

This pattern is clearly inadequate, and not without its dangers. For managers with bold vision are not easily developed in companies marked by herd-like conformity. Nor will such companies cultivate the kind of renegade thinking which produces ideas like frozen dinners, low-calorie foods and cake mixes. Larger companies especially tend to be avid supporters of today's search for "group harmony" and "group integration". As a result, security and advancement for young people often require falling in step with the "system".

Should this condition spread, corporate managers may eventually find themselves members of wonderfully harmonious groups, content with their smoothly running systems. But the contributions of gifted individuals may well be denied to business and society.

As consumer disposable income has moved upward and eating habits have changed, the food sector of our economy has experienced remarkable growth. If the food industry is to keep pace with our nation's growth, this trend must continue. As the search for new, higher-margin products continues and product innovation becomes accelerated, no successful company will be able to sit back and rest on past accomplishments.

Each segment of the industry will have to examine anew its functions and operations. All will have to adjust to a new environment where food technology and marketing opportunities take precedence over tradition.

This means new directions for management, and an increased need for management reserves in an expanding economy. Each day, modern business will demand greater specialization of its lower ranks, but greater breadth and perspective at higher levels. And the problem of spanning the two will become more difficult.

It is our opinion that management development can counteract this narrowing influence, and thereby prepare men for leadership.

(Continued on next page)

H. F. KRIMENDAHL
President
Stokely-Van Camp

Continuous improvement to maintain high quality

If a food producer is to be successful, he must concentrate on the task of winning and holding the confidence of his customers and their loyalty to his products. The only way to do this in this era of modern merchandising is to provide food of consistently high and uniform quality, appearance and flavor, because once the customer has been disappointed in this respect, he will select from the competitive lines which are to be found at his finger tips.

For this reason the major goal of our company in 1957 is, as it has been in the past, the maintenance of the highest standards of uniform quality for every one of our products.

Although control of cost is vital to a successful operation, an alert staff and management team will effectively maintain a competitive position in this respect. The control of quality, however, encompasses an organizational problem even wider in scope, in that it requires the enlistment of support from growers, suppliers, and employes throughout the organization, from fielding to warehousing and shipping operations.

Recognizing that our raw material must be of the very best quality, we want our growers and suppliers to understand and respect our company's standards of quality, and to cooperate with us in finding ways to improve our raw materials so that improvement may be ultimately reflected in our products.

Similarly our management, supervision and employes must be constantly alert to safeguard quality in the raw material, in processing, as well as in packaging and handling so that the containers are representative of the quality of the products.

Quality will often cost more in terms of effort as well as in terms of dollars, but when a choice must be made between the two, the decision must unquestionably support the maintenance and improvement of quality. Experience has shown that when food is plentiful as it is in this country today, and when the national income is rising as it is now, the quality product can demand and receive a comparatively higher price that will more than compensate for any increase in cost which may be incurred in achieving uniformly high product quality.

PAUL S. GEROT
President
Pillsbury Mills, Inc.

Increase low profit margin for faster development

We try to make our daily decisions at Pillsbury in terms of a set of long-range goals. But the attainment of each of these goals depends in a very direct manner on profits. Therefore, I think that if I could select only one major goal for our organization to achieve in 1957, it would be an increase in our margin of profit.

Of course, I recognize that the milling business is a business with a relatively low profit margin, coupled with a high degree of stability. I believe it should remain such for the overall good of our economy. But I feel that present profit margins for our industry are generally inadequate for satisfactory development. We need money just like any other type of business: money to pay stockholders a fair return on their investment, and money to plow back into the business for needed modernization and growth.

Where is the money to come from? In present competitive conditions a manufacturer is reluctant to raise his prices. He can, however, do a number of other things. Some of the steps he can take are these:

- Increase sales volume: as volume moves past the break-even point, the possibility of upgrading profits increases steadily.
- Trim costs: not by a wholesale lopping of budgets, but by a scientific analysis of manufacturing, administrative, and sales procedures. At Pillsbury, for example, we have adjusted and revised our accounting procedures; launched a materials control program to document the movement of all materials through our company; and set up a systems and procedures group to standardize our operations.
- Introduce new products.
- Aggressively promote those items on which margins are sound.
- Continually scrutinize organizational structure to meet changes in the market. Along with this should go a streamlining of organization so that work can be done better, decisions can be made easier and faster, and people can be better informed.

I am confident that each of these programs, properly implemented, will contribute to the immediate goal of greater earnings, and thus to the long-range goals.

Are You Eating Your Way
Heart Attack?
By STEVEN M SP
ctors have new evidence that our high-cholesterol (mg
behind coronary disea
Here's why
"The Fats in the Fire"
Eating With Death?
Curtailed Consumption Of Fats Is Recommended By Dr. Keys
Stare, Pollack Discount Effe
Of Fat As Heart Disease Fact
Q.E.D.—Fat's
DIETARY FAT AND BLO

Publicity is beginning to break on new nutritional findings which link heart disease causes with "saturated" fats in the diet. Here's a background picture on the subject—and what you can do to forestall 'unhappy occurrences'

newest dietary whipping boy | SATURATED FATS?

KARL ROBE
Associate Editor

Right now in scientific circles there is significant news for the future conduct of many of the food industries. Lurking behind recent discussions among nutrition men is information concerning a consolidation of thinking on the subject of "fats in the diet, and their role in heart disease". The results of this thinking are just beginning to seep out toward the consumer.

As a result of this "new thinking" among nutritionists, the general public—within months— will probably be getting concerned about such esoteric terms as "saturated vs. unsaturated fats", and "cholesterol build-up", as well as asking such questions as "which foods can I buy that contain the 'good' kind of fat?"

It behooves food men to look into this latter question, and to see if they can answer it affirmatively for their products. Here is a background of facts about the subject, and what you can do to improve the position of your products, if and when a full scale nutritional storm breaks with any degree of ferocity.

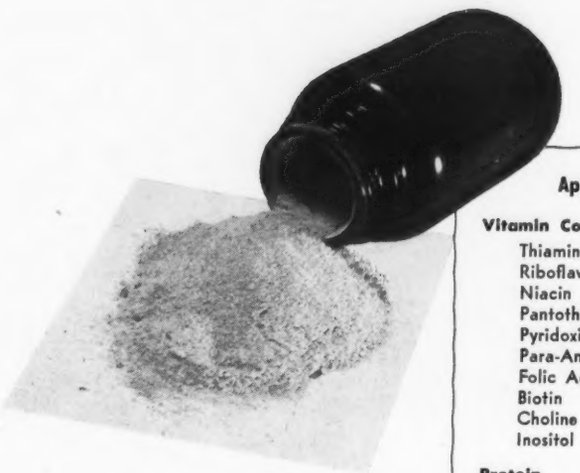
The feeling in nutritional circles now is based on studies which were started 3 to 5 years ago, when cholesterol, a normal constituent in all animal cells and fatty foods, was being investigated for its role in heart disease. Cholesterol plugs the arteries of coronary disease victims much as lime deposits plug a pipe. Results from these studies are now beginning to clarify the formerly murky picture which surrounds the role of fats in contributing to coronary damage.

The conclusion, at this point: the intake of excessive calories and excessive quantities of the "saturated" fats, and the development of heart disease are closely related. The nature of the primary injury to the arteries has not been established, however, despite the evident importance of the cholesteral deposits.

Saturated fats include many of the commonly used animal fats and some plant fats: butter, lard, suet, and fatty meats; egg yolks; plus coconut oil and hydrogenated fats such as vegetable shortenings and margarines. There is considerable variation in degree of saturation, however, within these groups. These foods, then, are very likely to become the popular "villain" in the dietary spectacle over the next few years.

(*Continued on page* 31)

new economical source of of high-quality protein



Torula yeast is bland-tasting product; has more than 50% protein; also rich in B-complex vitamins; seen as nutritive supplement for many foods

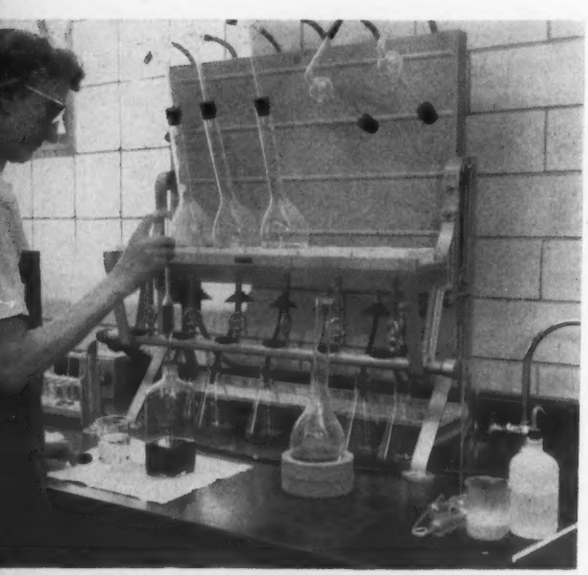
A strong newcomer in the field of nutritive supplements, Torula yeast is now being made in plentiful quantities by an economical production process. Torula made by this process has already found ready acceptance by formula feed producers, and now, with recently-granted USP approval, should find use as food additive, also. It should be useful for upgrading nutritive content of such products as baked foods, canned meats, gravies, and baby foods; spaghetti and related products; prepared mixes; cereals; beverages; confections; some dairy products; and others.

Torula is not a new type of yeast — it has been known for many years. As a typical yeast, it is rich in protein and vitamins, but has heretofore been expensive to produce. It is only in recent years that a process has been developed to produce it economically, utilizing as the principal growth nutrient the wood sugars contained in the spent sulfite liquors produced by the paper industry (see article on facing page for details on production).

As produced by this process, Torula is a dry, free-flowing powder. In contrast to other yeasts, its flavor is quite bland — somewhat nutlike. The product is in an inactive state — cannot contribute to rising action in baked foods.

Torula yeast is palatable in many foods in levels from 1 to 25%. Its high natural lysine content makes it particularly valuable as a protein supplement in cereal products. When Torula yeast is used in protein breads at levels of 15% it will increase the protein content of the bread by approximately 5%.

(Dried Torula Yeast USP is produced by Charmin Paper Mills, Inc. in Green Bay, Wis., and is distributed by Red Star Yeast & Products Co., Inc. Dept. FP, 221 E. Buffalo St., Milwaukee, Wis. . . . or check 7024 on form opposite last page.)



Tight quality control guards production of Torula. Pictured is analysis of wood sugars contained in spent sulfite liquor, used as growth nutrient

Approximate Analysis of Torula

Vitamin Content	Micrograms per Gram
Thiamine	120 - 150
Riboflavin	45 - 65
Niacin	500 - 650
Pantothenic Acid	55 - 65
Pyridoxine	25 - 35
Para-Amino-Benzoic Acid	10 - 15
Folic Acid	20 - 25
Biotin	0.5 - 1.0
Choline	2500 - 3500
Inositol	3500 - 4500

Protein
Minimum 50% (% N X 6.25)

Ash
Maximum 8%

Moisture
Maximum 7%

Amino Acids	Percent on As Is Basis
Arginine	3.6
Cystine	0.7
Glutamic Acid	6.9
Glycine	0.2
Histidine	1.3
Iso Leucine	3.8
Leucine	3.6
Lysine	4.1
Methionine	0.8
Phenylalanine	2.4
Threonine	2.6
Tryptophane	0.7
Valine	3.0

Mineral Content	Percent
Potassium	1.80 - 2.20
Sodium	0.01 - 0.02
Calcium	0.85 - 0.95
Phosphorous	1.50 - 1.90
Magnesium	0.15 - 0.25
Silicon	0.04 - 0.06
Sulphur	0.50 - 0.80

Mineral Content	Parts per Million
Iron	155 - 165
Copper	15 - 17
Maganese	32 - 34
Aluminum	25 - 27
Zinc	122 - 127
Lead	1.3 - 1.5
Cobalt	0.03 - 0.05
Nickel	1.5 - 1.7
Iodine	2.9 - 3.1
Chloride	0.25 - 0.35

Bacteriological Analyses
Bacteria count does not exceed 7500 per gram

Mold Analyses
Mold count does not exceed 50 per gram

HOW TORULA IS MADE

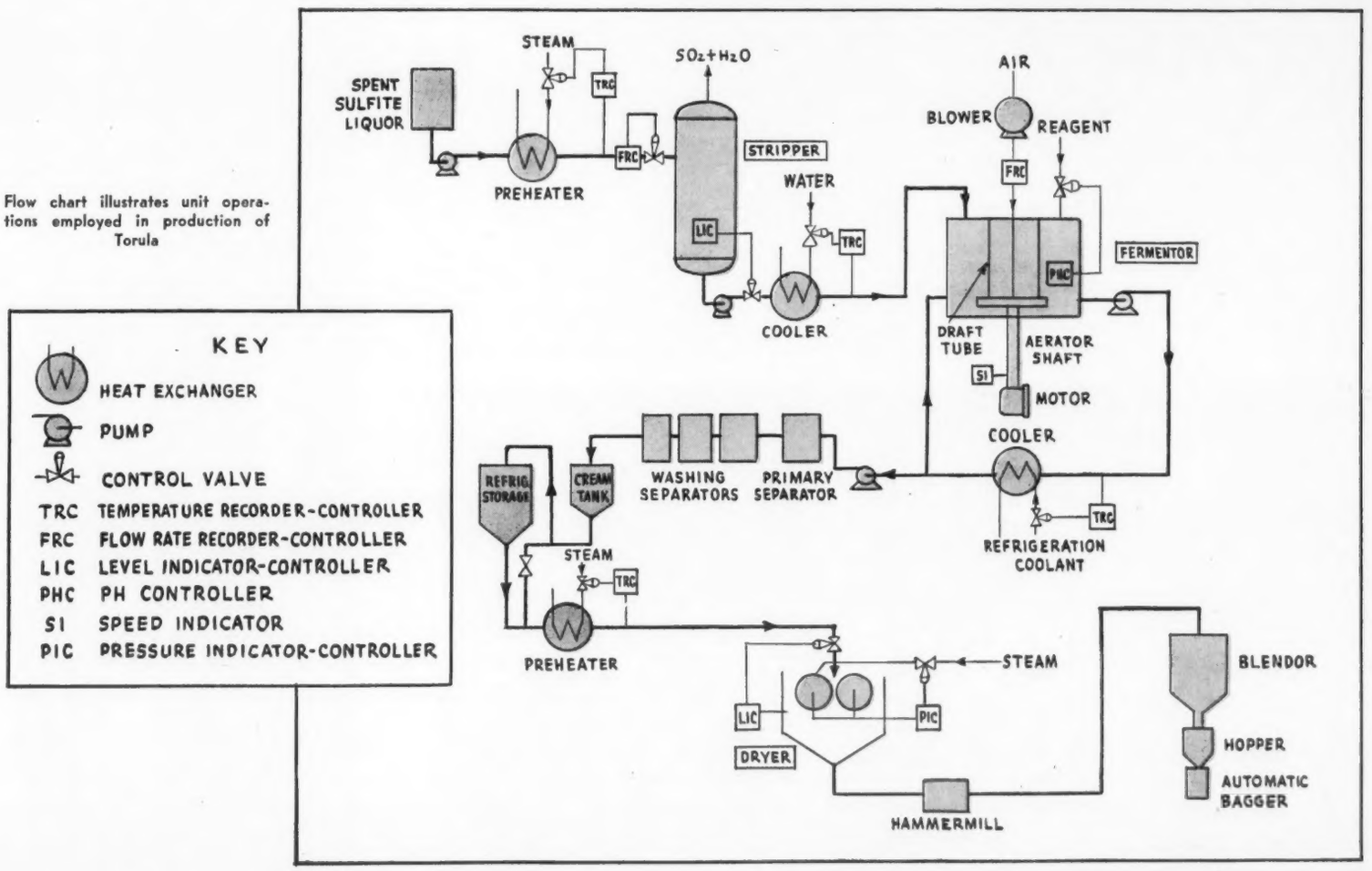
Produced continuously, using wood sugars in paper mill's spent sulfite liquor as principal growth nutrient

WALTER KAISER, Asst. Managing Editor
Verified by **WALTER JACOBS**
Yeast Plant Supt., Charmin Paper Mills, Inc.

The process used by Charmin Paper Mills to produce Torula yeast was first developed on a commercial basis by Germany during World War II. It is based on the fact that the wood sugars leached out of wood in papermaking provide an excellent growth medium for the yeast. In making paper, the wood is first sliced into chips, then "digested", or cooked, in a sulfite solution to extract the fibers which eventually become paper. In the digestion, the sulfite solution absorbs the wood sugars, in addition to many other

(*Continued on page* 58)

Torula is grown in these 60,000 gal fermentors. Primary and washing separators are seen at right



Flow chart illustrates unit operations employed in production of Torula

From a single control station . . .

PUSHBUTTON WEIGHING AND CONVEYING

sugar ▸ flour ▸ graham flour ▸ water
invert syrup ▸ molasses ▸ shortening

HOWARD P. MILLEVILLE,
Editor*

About 62 tons of ingredients are used during a normal eight-hour day for sweet cracker dough at Nabisco's new Philadelphia bakery (see last month's cover picture story in FOOD PROCESSING). These ingredients must be weighed and conveyed to 16 mixer stations, 12 of which are served by the method described here.

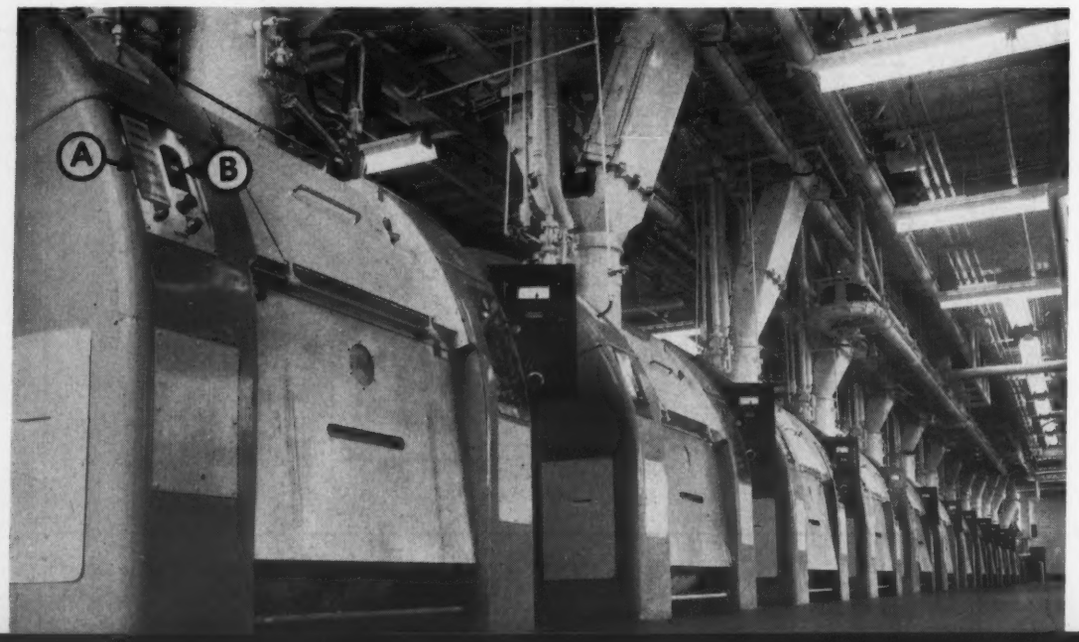
Considerable mechanization of the operations involved in handling ingredients was achieved four years ago by Nabisco at their modern new plant in Chicago. All major bulk ingredients are weighed automatically at the Chicago plant; however, the weighed flour, sugar, and graham flour are transported to the mixers by lorries, which must be escorted by an operator. At the new Philadelphia bakery, these ingredients are automatically conveyed directly to the mixers.

Pushbutton Operation: On signal from the mix operator, the operator at the master console lines up flow of ingredients requested from storage to the

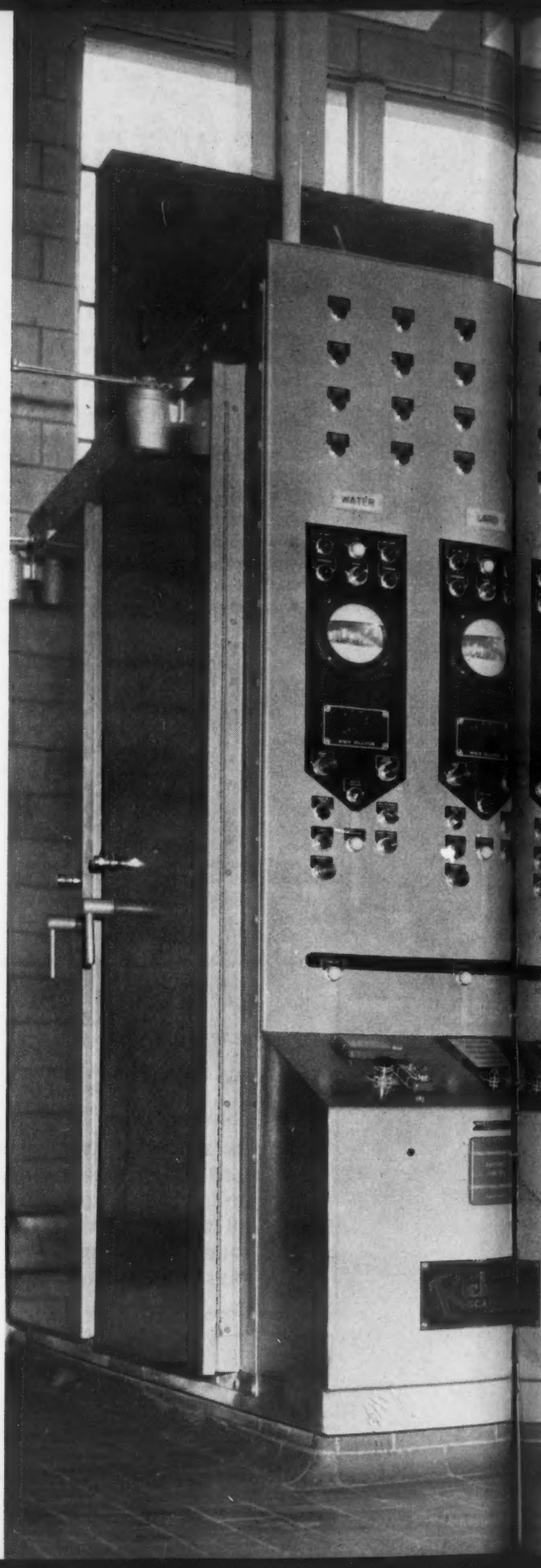
(*Continued on page* 26)

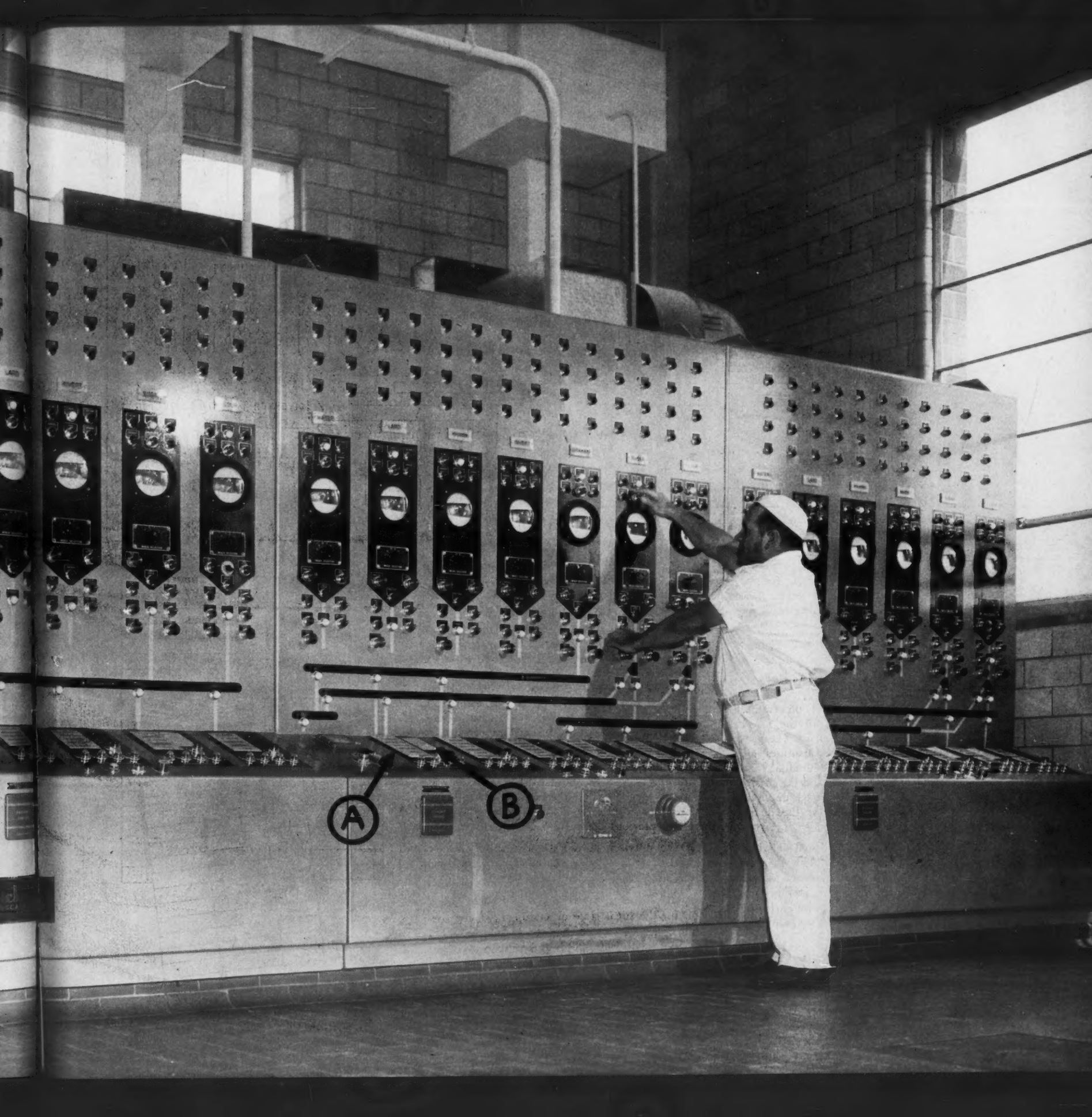
*Flow diagrams and details of automation based on information supplied by Ben Martyn, Project Engineer of Richardson Scale Co. Article checked by the technical staff of National Biscuit Co.

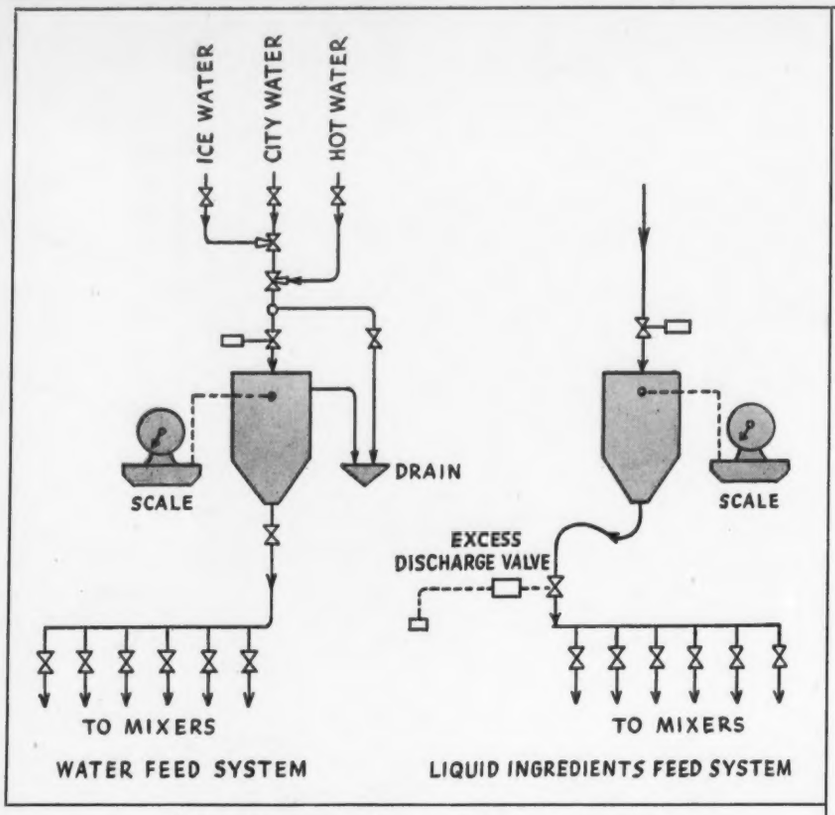
Battery of 16 mixers is located directly beneath the 15-floor storage tower. When delivery of an ingredient is completed, a light flashes on for that particular ingredient on the signal panel (arrow A). Operator then signals for next ingredient (group) as listed on Formula Card (arrow B). Note the corresponding Formula Card holder and signal panel lights on the master console panel

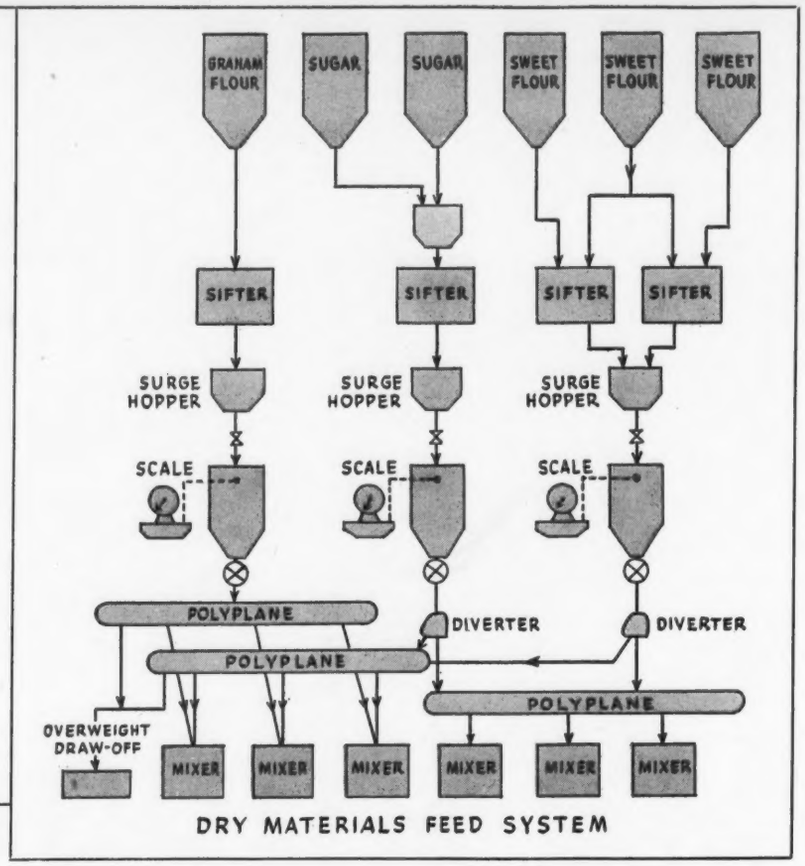


At this nerve center of the bakery's mixing operations, an intricate system of flow lines and pilot lights indicate current status of the batch weighing and conveying operations following pushbutton orders




A
B





Material flow diagrams for Group V (center panel section)

(*Continued from preceding page*)

mix station. The actual weighing controls for the delivery of batches of ingredients to the mixers have been preset within the console at the beginning of the day's operation.

Operator starts the automatic conveying and weighing by pushing a button. When delivery is complete, a light flashes under the ingredient name at both the mixer station and the master console.

Addition of ingredients is continued on further signal from the mix operator until all the major bulk items have been added to the mixer. (Leavening and flavoring in pre-measured quantities are added manually.) Alongside the pushbutton communication signals at both the mixer and the master console (A on the photos), are placed duplicate formula cards (B on the photos) for the dough being made.

Ingredients on the formula cards are listed individually as well as in groups. Thus, for flour the formula may call for a certain weight from one storage bin and another weight from another storage bin. Only when all the flour has been delivered will the signal "flour" light up on the mixer and the console.

The Master Console: The twelve mixers are divided into three groups, designated Group IV, V, and VI. Each group has its own conveying and weighing system corresponding to the three sections of the master console visible in the photo. That is, each group has a separate scale for each ingredient — sugar, flour, water, etc. — which scale can discharge to any mixer in the group.

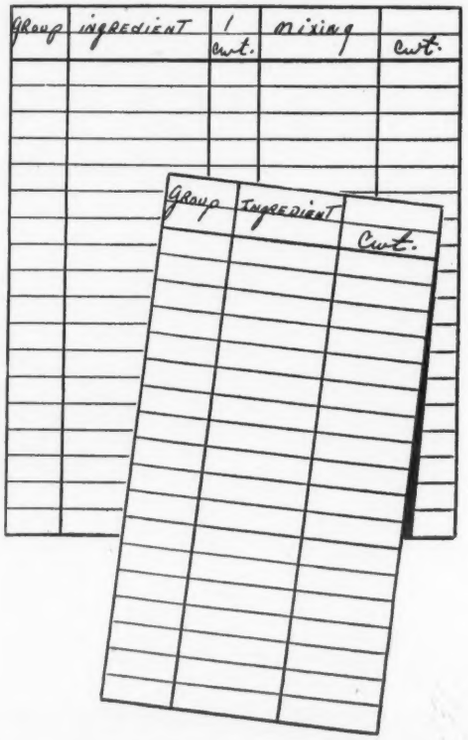
Flow of liquid and solid ingredients from storage to the mixer for Group V is shown in the accompanying flow diagram. Note that the discharge from the flour, graham flour, and sugar scales goes to a Polyplane conveyor which continues to run until all the material discharged into it has, in turn, been discharged into the mixer. (Liquid discharge lines are always kept filled to the discharge valve at outlet.)

The flow diagram for Group V shows that two of the Polyplane conveyors discharge batches from both the sugar and flour scales. Interlocking devices automatically hold up the discharge to these Polyplanes until any previous charge has completely emptied.

After the operator at the master console receives a signal from a mixing station for an ingredient such as sugar, the following steps occur:

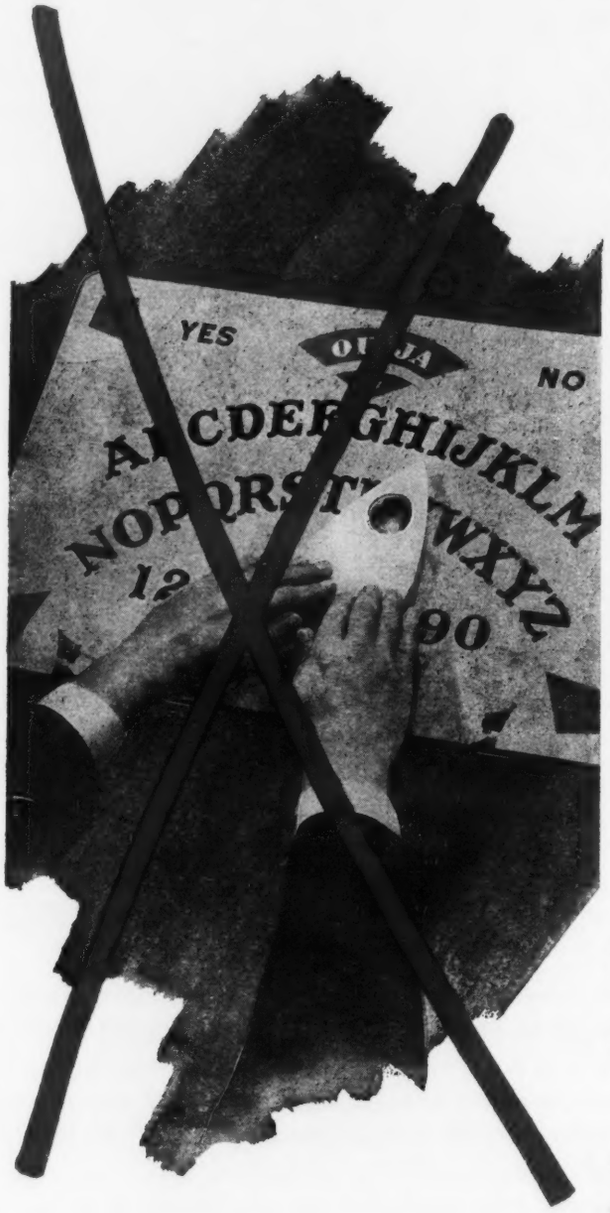
1. Operator checks to see if ready-to-start light is on for the sugar scale of Group V; if any trouble lights are on, he removes source of trouble. In any event, interlocking devices prevent any new operation from starting until ready-to-start light is on, signifying scale at zero balance.
2. Operator lines up route from storage bin to the

(*Continued on page 84*)



Formula cards for the mixer and master control stations

Ouija boards are passé



Time was, when a person had a question, out would come the ouija board for an answer. This wasn't too accurate a system, of course . . . but a lot of people put a lot of faith in what the ouija board told them.

Times change — and today accuracy is the keyword. That's why the modern business publication wants its circulation audited.

In joining BPA* the publisher is taking an important step toward sound and accurate planning in your behalf. It means that he is checking, double-checking and constantly rechecking —

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- **Editorials that will *help you in your work***
- **Advertising that will *have value to you***

He can serve you even better if you will complete surveys and questionnaires which he may send you, and if you will give him your thoughts and opinions on the editorials and advertisements in his magazine.

You, the reader, are the *key person* to the publisher — and the BPA* audit helps him in his never-ending effort to think about you and design his magazine for you.

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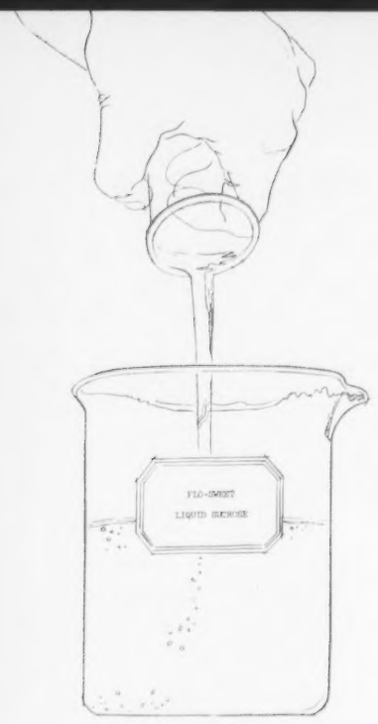
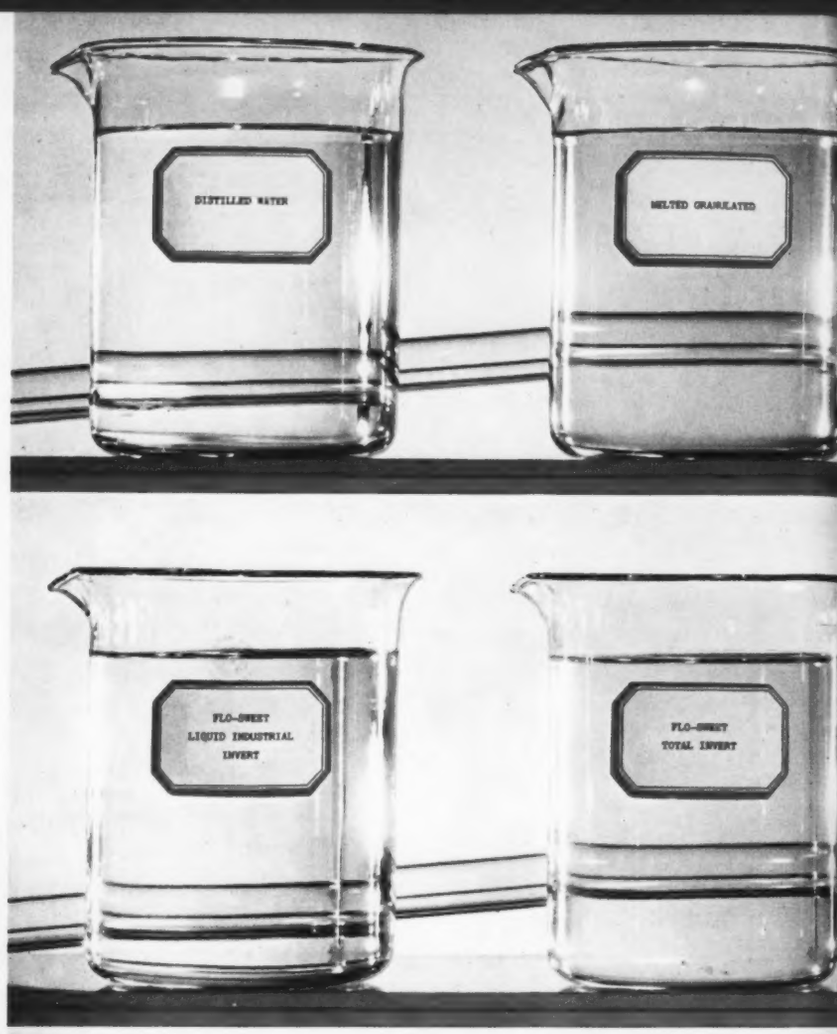


This color illustration is reproduced from an unretouched 8 x 10 Ektachrome original. The sample of melted granulated shows the color produced by a mixture of *three* commercial granulated sugars. To accentuate the colors for printing purposes, all samples were photographed in 1000-milliliter beakers; an idea of this size can be obtained from the typing on the labels. Below, a precision nephelometer is used to maintain frequent laboratory checks on Flo-Sweet's consistently lower turbidity – a further measure of refinery efficiency and liquid sugar quality.



IT'S CLEAR TO SEE...

See for yourself! This unretouched photograph reproduces the colors of the eight principal types of Flo-Sweet as precisely as possible with modern printing techniques.

Compare, if you will, Flo-Sweet liquid sucrose with distilled water. Hard to tell them apart, isn't it? Here's sugar quality you can *see!*

Note particularly the melted granulated, shown at the same concentration of sugar solids as the liquid sucrose. Compare it closely with Flo-Sweet industrial sucrose, industrial invert, total invert. Industrial types of Flo-Sweet show less color than granulated, the accepted standard of purity!

REFINED SYRUPS

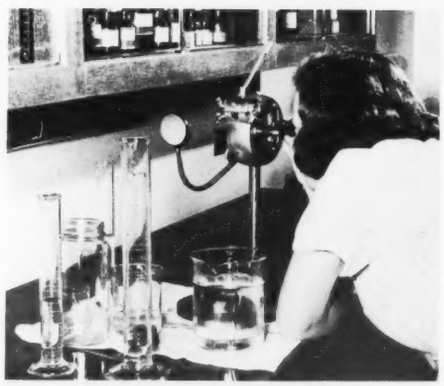
YONKERS,

SERVING INDUSTRIAL SUGAR USERS EXCLUSIVELY

FLO-SWEET *Quality* IN EVERY DROP!

In Flo-Sweet amber and golden sugars, the colors—and characteristic flavors—are deliberate, and closely controlled. Note the clarity and freedom from haze.

The color of a liquid sugar is, of course, only one indication of its quality. We welcome comparison of Flo-Sweet with any other sugar—liquid or granulated . . . on any basis whatsoever: color, taste, aroma, laboratory analysis . . . or the practical test of how it performs in your own food products. You will discover what many Flo-Sweet users know through long experience: that Flo-Sweet has established exacting new standards of liquid sugar quality!



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FIRST IN LIQUID SUGAR

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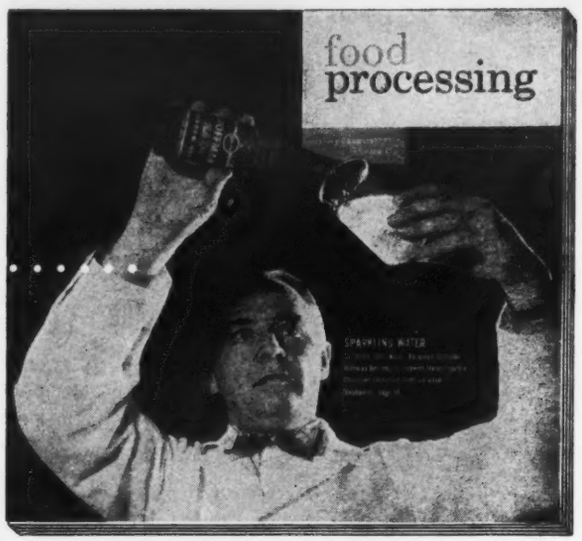

This magazine costs more than $25.00 per year

Maybe you've thought publishers make money on a $3.00 or a $5.00 subscription . . . that that is why they ask you to subscribe.

No, it's not true . . . your $3.00 or $5.00 fall far short of "paying" for *any* really good business magazine.

The costs of printing, paper and postage alone usually exceed subscription prices. Editorial costs and other expenses run to many times that amount. And usually it costs more just to sell such subscriptions than they bring the publisher in dollars. So, the publisher actually "loses money" on such sales.

Then, why? . . . yes, *why* do some publishers charge a nominal rate for a subscription . . . but other publishers send their magazines without charge?

Well, the "paid-subscription" magazine gets a lower postage rate than does the "non-paid subscription" magazine. Some publishers feel this postal advantage is important. So they charge a "token fee" as a subscription price. And so win a lower postage rate.

But—whether you pay nothing, or such a "token fee," you — the reader — do not *really pay* for the magazine's service.

No—advertisers pay the bills . . . and so, logically, advertisers *demand* the best possible coverage of the important, key men of the field. That means folks like you, who exercise buying power.

FOOD PROCESSING "hand-picks" its readers—for best, effective circulation . . . and sends the magazine to these key folks, without charge.

You see, you simply can't get maximum coverage of important folks by trying to force them to buy subscriptions. Such men, limited in numbers, are scattered all over the U.S.A.; travel and/or direct mail, cost money; a large share "forget to renew" each year; and, no matter how much time, money and pressure you put on them, there are always some important men who will never buy.

You don't "pay"—FOOD PROCESSING gets better circulation. So, as you can see, a subscription price is at best but a "token payment." You don't really pay for any magazine with $3.00 or $5.00.

But, FOOD PROCESSING gets the best, most effective circulation coverage by "hand-picking" the right readers. This gives values to advertisers which they can't possibly get in any other way.

That's why . . . FOOD PROCESSING hand-picks only qualified readers . . . Men Who Manage food processing plants . . . presidents, partners, plant managers, foremen, food technologists, engineers, chemists, directors of research, etc. Then the editors make the magazine so interesting, so valuable, these folks want to read it.*

That's why FOOD PROCESSING spends many thousands of dollars on each issue—to give you this service costing more than $25.00 per year . . . without charge . . . as *you* are an important reader in the food field.

No, you can't "pay for" any good business magazine with $3.00 or $5.00. Whether you receive a "paid magazine" or a "non-paid magazine" you are still enjoying a valuable service — whose cost is far above any price you paid for a subscription.

**Every issue proves this qualified readership . . . by unequalled response from these key readers. May we show you the evidence?*

Food Processing

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ABC NBP

Unsaturated Fats

(*Continued from page* 21)

Nutritionists are just beginning to publicize their conclusions among scientific groups. At a recent nutrition meeting in Berkeley, Calif., Dr. C. G. King, head of the respected Nutrition Foundation, stated that "there is definitely a strong interest in the unsaturated fats in the US diet". "How useful they will be in lessening the incidence of heart disease cannot be predicted from present evidence."

Dr. Norman Jolliffe, famed Manhattan nutritionist, recently told a group of heart specialists (as quoted in TIME magazine): " 'Stress and strain, physical indolence, obesity, luxury living or tobacco play but a minor role in producing a high coronary heart disease rate under 65 years of age' . . . *unless a high intake of saturated fats is added to these factors.*"

How will Mrs. Jones react?

For the food industries involved is this information "the handwriting on the wall?"

Health and diet are strong motivators — witness the rise of fortified foods in the wake of published vitamin studies over the last two decades. Powerful forces will probably be at work in the next few years in a similar fashion on fatty foods, as more scientists, doctors, and writers swing their attention toward the saturated fats-heart disease correlation.

The results of recent studies on the subject is bound to spell trouble, at least for the short term of perhaps two to five years, for a long list of food products. This doesn't mean only meat fats as such — attention is bound to focus also on such fat-containing foods as pies, both dessert and meat types; prepared frozen and canned foods; poultry products, especially when fried; salad dressings; bakery mixes and bakery products; and of course margarine, butter, and shortening themselves.

As consumers shy away from the saturated types of fats, they will surely swing toward the unsaturated types — corn oil, cottonseed oil, and peanut oil (all non-hydrogenated). (Fish and marine mammals also contain the desirable unsaturated fats.)

Protective role of unsaturated fats

Five years ago, there was as much controversy among nutritionists concerning the role of cholesterol in heart disease as there has been recently on the tobacco-lung cancer linkage. The Eskimo was one of the biggest arguments which was formerly used to excuse fats as a contributor to the cholesterol build-up which precedes heart failure. Since caveman days, he has been existing on a diet made up very largely

(*Continued on next page*)

For more information on product on pages 28 and 29, specify 7025 . . . see information request blank opposite last page.

Polyethylene-cellophane laminated package is supplied by **Standard Packaging Company,** Clifton, N. J.

"polyethylene laminated package

adds at least 100% to the shelf life"

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Sliced meats, poultry, ground beef, processed foods, produce stay fresh longer and are protected longer in film made of BAKELITE Brand Polyethylene. See your packaging supplier for how-to-profit assistance.

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PRODUCT NEWS FROM Pfizer

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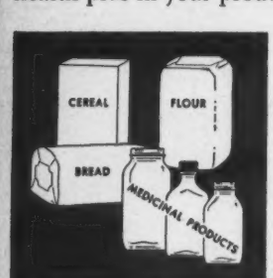
produced by fermentation... now available in quantity

• Through its leadership in fermentation chemistry, Pfizer now offers pharmaceutical and food manufacturers the essential nutrient L-lysine in practical commercial quantities. A unique fermentation process assures that only the biologically active L-isomer is produced.

In the average human diet lysine is more deficient than any of the other eight essential amino acids.

Volume production of Pfizer L-lysine means you can offer an important new health plus in your products. In medicinal products Pfizer L-lysine should have special significance in meeting the nutritional needs of children, pregnant women, older people and those who are recovering from illness. In cereal food products, particularly wheat products,* Pfizer L-lysine can improve the amino acid balance to a level comparable to that of high quality animal proteins.



Write us if you would like further information about Pfizer L-lysine, and a free sample. Pfizer Technical Service men can also help you in taking advantage of this important new development.

*Before adding L-lysine to food products, manufacturers should check Federal and State standards of identity.

Manufacturing Chemists for over 100 years.

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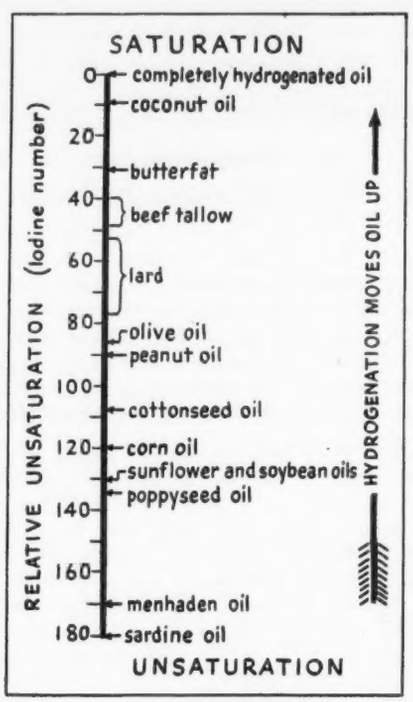
Unsaturated Fats

(Continued from preceding page)

of fats — and heart disease is rare among the Eskimos.

Then came results of experiments by a young Britisher, who showed that the seal oil in the Eskimo diet actually acted to depress cholesterol build-up in the blood. Sunflower seed oil had previously been known to furnish the same protection. This information led to the conclusion that there is a function in all unsaturated fats which acts as a protector against plugging of the arteries with cholesterol.



Considerable more research is needed before all the answers on the cholesterol-unsaturated fats questions are resolved, however . . . but the information is certainly not in the "diet fad" category (at least yet) because the evidence is too well documented by responsible individuals and groups.

The interim facts, however, could easily be taken by diet opportunists, and blown into a full-scale fad . . . perhaps by the placement of a single article in a Sunday supplement. Such early publicity, if it takes the usual doom-sounding tack, could easily be loud, one-sided, and adverse to the true facts when more research and evaluation has been completed.

Economics of diet change

Interpreting these research results as they affect specific products could be highly important to the economy of fat-containing food producers. If doctors begin to advise patients to lay off bacon and fatty meats, go easy on the butter and margarine, eat more

fish, and drink skim milk in order to avoid heart disease, a sizable hunk of population would be affected . . . especially with the average age of Americans getting higher every year. A switch to the *unsaturated* fats would, of course, affect the economics of such products in a most favorable manner.

In general, the unsaturated fats are liquid. They are not as stable as the saturated fats. This bit of information could mean changes in handling and distribution patterns: with a lower shelf life, more refrigeration and faster turnovers would be necessary. This would further increase the load on the refrigerated cases in stores, increasing the need for refrigerated trucks, and require more refrigeration at intermediate distribution points.

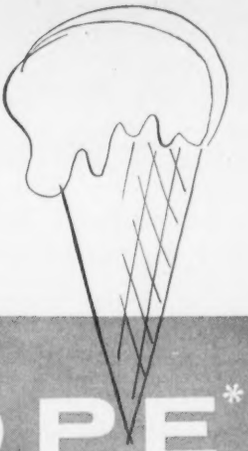
If saturated fats should become a whipping boy — as well they may — it might pay to look into possible formula changes which would convert a particular product line — cake mixes, and pie crust mixes, for example — from the saturated fatty class to the unsaturated side.

In fact, here's an opportunity for an entire new line of such products to buck the highly competitive "regulars" in the bakery mix field: bring out a line of mixes made entirely of non-hydrogenated cottonseed (or corn, or peanut, if cost factors can be justified) oil. Then feature a "favorable fats" theme . . . providing, of course, that the public shows a positive reaction to the meaning behind the present research findings indicated above.

After all, fats have their "good" side, too. They have been shown to be necessary in the well-rounded diet, and to promote a feeling of general well-being. Like sugar, they will continue to be around the American scene for a long time — in spite of drastic pendulum swings of opinion and publicity.

"I wanted to see if you were awake in there."

So much for so little...



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Vanitrope* ... a pure, vanilla-like flavoring, 25 times stronger than vanillin, yet saving you up to 50% in flavor costs, is ideal for vanilla ice cream, as well as being especially effective in intensifying such flavors as chocolate, butter, coffee, fruit, and nut.

Vanillin ... of the very highest quality, Shulton Vanillin, U.S.P., is controlled throughout its manufacture to rigid flavor standards, and is highly recommended for quality ice creams.

Vanitrope* & Vanillin ... the finest vanilla-type flavor ingredients you can buy, work well together, or alone, and can be easily incorporated into your ice cream formulas.

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FINE CHEMICALS DIVISION
SHULTON, INC.
ROCKEFELLER CENTER
NEW YORK

When inquiring check 7028 opposite last page

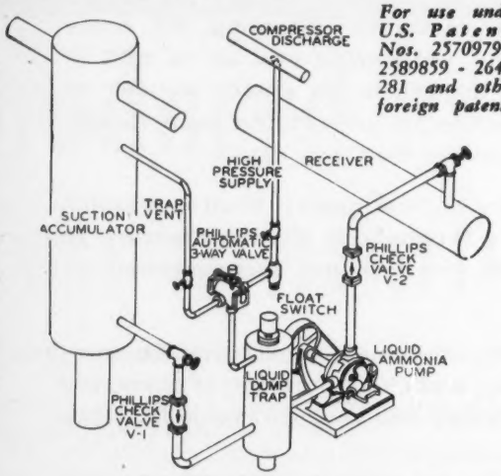
Ammonia "Slop-Over" Handled Automatically by PHILLIPS Liquid Return System

Protects Compressors, Saves Power, Makes Defrosting and Maintenance Simpler

Even in the best designed refrigeration systems, ammonia "slop-over" is a common occurrence. Two stage compression systems, booster systems and control ammonia compression systems subject to fast temperature and pressure changes are especially likely to have liquid in suction lines. This condition can seriously damage compressors which should handle dry gasses only.

Engineers at H. A. Phillips & Co. have devised a system that automatically returns "slop-over" directly to the receiver without regenerating and re-condensing the liquid. As shown in the drawing below, the Phillips Liquid Return System takes liquid ammonia which has collected in the accumulator, drains it through an outlet valve and check valve (V-1) into a liquid trap. Drainage occurs when the trap is at a low pressure. The trap is vented to the accumulator through a three-way valve and vent line. As the trap fills, a float switch is activated, energizing a three-way valve. This valve closes the vent line and connects the compressor discharge to the trap. Pressure builds up in the trap and closes check valve V-1. Pressure in the trap then reaches the same pressure as the receiver, opening check valve V-2 and allowing gravity to carry the liquid to the receiver. If gravity flow is not possible, a liquid ammonia pump is used. High pressure at both the pump inlet and outlet prevents flashing the liquid into gas. When the liquid trap is empty, the three-way valve is de-energized, closing the high pressure line to the trap. The trap is again vented to the accumulator, allowing liquid to drain once again into the trap.

For use under U.S. Patents Nos. 2570979 - 2589859 - 2641-281 and other foreign patents.



Phillips Liquid Return System

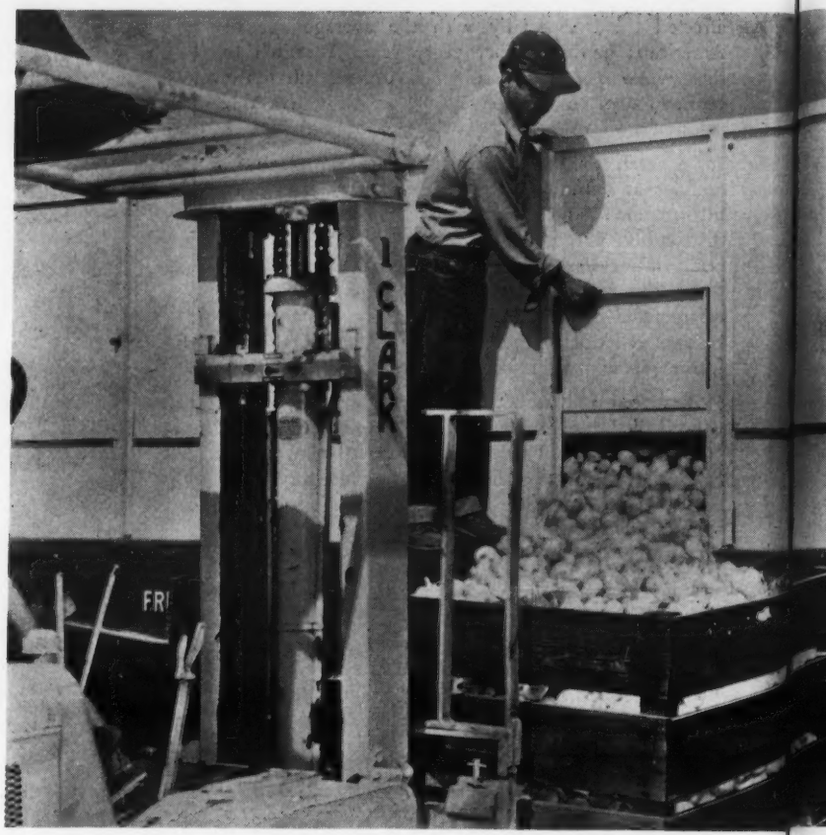
This arrangement is highly efficient since only one pound of compression gas is required to move 25 pounds of liquid. There is practically no loss of refrigeration potential of the recovered liquid. The system also permits oil flushed into the accumulator to be easily drained.

A number of "packaged" variations of this system in capacities to 1000-tons are available to handle all arrangements of accumulator and receiver locations. For full details, write . . .

PHILLIPS

H. A. PHILLIPS & CO.
DESIGNERS AND ENGINEERS
REFRIGERATION CONTROL SYSTEMS
3255 W. Carroll Ave. • Chicago 24, Illinois

When inquiring check 7029 opposite last page



Sample of onion shipment drawn through open panel into pallet box

sliding panels speed unloading

Permit trailer-trains to empty 49,000 lb cargoes by gravity without damage to onions

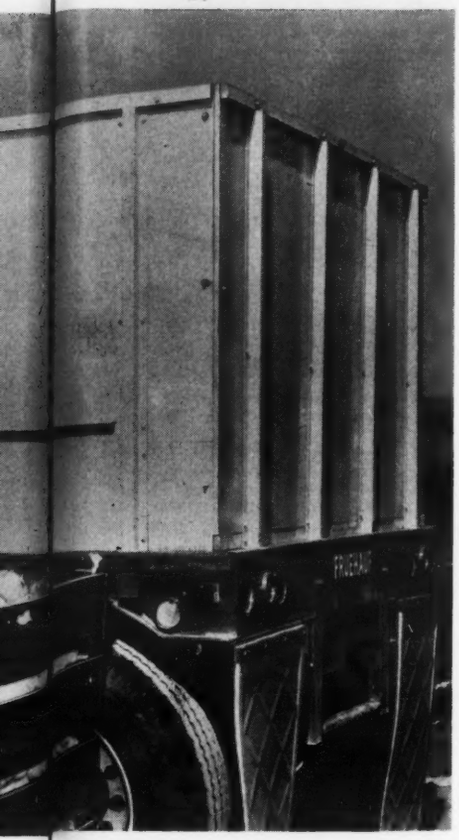
Illustrations show how unloading of onions at Gentry Division plant, Consolidated Grocers, Gilroy, Calif., has been fully mechanized. Time and labor savings plus elimination of any damage to the onions are made possible by use of specially adapted platform trailer-trains. These are provided with sides incorporating sliding panels.

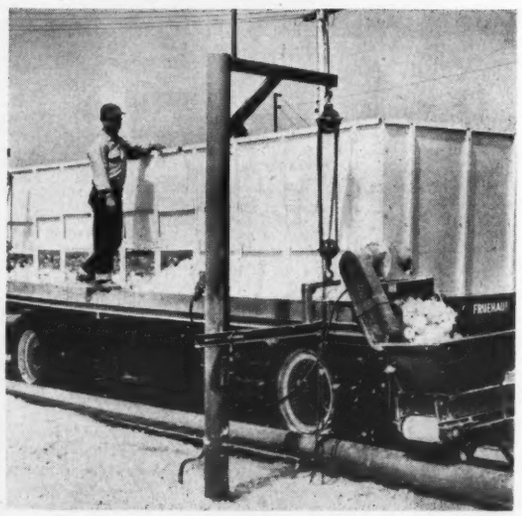
To fill pallet boxes, a single panel is raised. For mass unloading, a number, or all, of the wood panels are opened so that onions are quickly discharged onto conveyors placed at sides and back of the trailer-trains. Belts carry onions directly into storage bins. These bins are stacked to await removal to plant proper. To assure rapid, complete unloading, a removable wooden floor is installed over the trailer-train bed. This floor slopes outward from the center.

As both floor and side structures can be removed, Pete Moretti, the contract hauler, can also use all five of his trailer-trains to deliver bagged potatoes to chip manufacturers.

He also handles cargoes of garlic, barley, and rice in addition to the 49,000 lb trailer loads of onions hauled regularly during season.

(Platform trailer-trains are built by Fruehauf Trailer Co., Dept. FP, 10941 Harper Ave., Detroit, Mich. . . . or for more information check 7030 on form opposite last page.)





Entire side of trailer-train opens by raising all panels. Onions roll down floor, which slopes slightly from center, onto conveyor

THESE '57 CHEVIES TURNED THE TOUGH ALCAN HIGHWAY INTO A TURNPIKE!

They took the "teeth" out of North America's toughest truck run in an amazing display of stamina and dependability! The Chevrolet Alcan test called for great truck components . . . and here they are, the same modern features you'll get in *your* '57 Chevy!

Modern high-compression 6's—a time-proved Chevrolet truck Thriftmaster 6 made the tortuous Alcan Highway test look easy . . . registered a high 18.17 miles per gallon!

Short-stroke V8 power—with the shortest stroke of any truck V8's, new Chevy engines stand first in their field for efficient load-pulling! Their great performance in Alaska proved it.

Safe, sure brakes now Alcan proved—in light- and medium-duty models, Hydrovac power brakes* supplied up to 85% of the braking effort!

Unit-design cab and body construction—Chevrolet truck cabs and bodies remained tight and solid on Alcan bumps, showed that they're built to *last!*

Rugged Synchro-Mesh manual transmissions—they displayed never-say-die durability . . . came through with smooth, flexible, trouble-free performance!

*Easy-going Hydra-Matic transmission**—it reduced driver's work immeasurably and it saved wear on drive-line parts, too!

Sturdy frames and long-leaf springs—these brawny chassis components proved they can take it when the going is roughest . . . took the Alcan's worst with strength to spare!

These Alcan-proved Task-Force 57 features and others like them (such as extra-heavy rear axles, easy-rolling Ball-Gear steering, and new, improved tubeless tires) are ready to tame your tough truck runs too! Boost your hauling profits by seeing your Chevrolet dealer soon! . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

**Optional at extra cost.*

1957 CHEVROLET TASK-FORCE TRUCKS

PROVED ON THE ALCAN HIGHWAY . . . CHAMPS OF EVERY WEIGHT CLASS! CHEVROLET

When inquiring check 7031 opposite last page

HUMIDIFICATION
can cut your costs!!
if you use or process paper or paper board containers

Saves Bag Breakage

"In checking the results of installing Armstrong Steam Humidifiers, I found bag breakage had dropped from 500 to about ten daily."

—Food Processor

● Do you store, print, convert or package in paper or paper board? In the winter, heated inside air lowers the relative humidity and causes dry air. Dry air absorbs moisture from paper and paper board causing it to weaken so that it is easily torn or broken.

Economical, automatic Armstrong Steam Humidifiers will increase your profits by reducing production and material losses caused by dry air. Installed just like unit heaters. Low priced. Unconditionally guaranteed.

Write: ARMSTRONG MACHINE WORKS
8811 Maple Street, Three Rivers, Michigan
Send for the Humidifier Bulletin No. 500
Contains complete information—no obligation.

ARMSTRONG STEAM HUMIDIFIERS

When inquiring check 7032 opposite last page

Warm COLD FEET with • THERMO-MAT •

Here's INSTANT RELIEF from cold, aching feet, at work or at home, sitting or standing! THERMO-MAT emits PENETRATING RADIANT WARMTH extending from toes to knees! Licks cold floor problem everywhere—*drafty locations, unheated rooms, booths, concrete floors, etc.!* Unaffected by dampness.

Plugs into 110V Socket. Wound for 60 to 250 watts. Size 14" x 22". Full Neoprene covered. No Rubber! 80% of USERS REORDER!

PRICE **$12.00** Shipped Postpaid

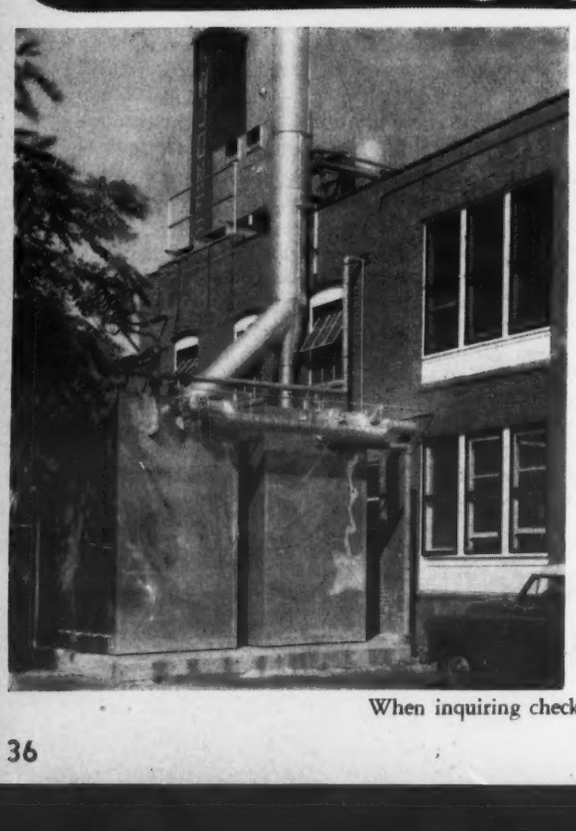
SAFE, ECONOMICAL *Order now by mail for all uncomfortable locations. Describe conditions of use, type of floor, outside or inside installation.*

THERMO-MAT CO.

814 SOUTH ROBERTSON BOULEVARD • LOS ANGELES 35, CALIFORNIA

When inquiring check 7033 opposite last page

The "King Zeero" provides Ice Water (32°-34°) in Large Quantities at Low Cost



Tons of ice are frozen on the extra heavy coils during the "off-peak" periods, ready for your disposal without handling when needed for quick cooling of food products.

The "King Zeero" is a combination ice accumulator and continuous water cooler. With our new HI-LOAD or extra HI-LOAD Coils on vertical models, additional flash cooling capacity and faster ice making rates are obtained.

"King Zeero's" Patented Built-In Agitation obviates the necessity of a mechanical agitator. No moving parts to require servicing and expense.

Only a relatively small compressor is needed. With the "King Zeero" you have LOWER POWER DEMAND CHARGE — LOWER MAINTENANCE — LOWER OPERATING COSTS — LESS INVESTED CAPITAL.

A size for every operation — large or small — capacities 500 to 36,000 lbs. in a single unit. Write for full information.

← "King Zeero" Model 2-E-612W installed outside of Jones Dairy, Buffalo, N. Y.

THE KING ZEERO COMPANY
4300-14 W. MONTROSE AVE., CHICAGO 41, ILL.

When inquiring check 7034 opposite last page

transportation

Makes in-plant trips of supervisors, other personnel, safe, easy

Battery-operated runabout has top speed of 10 mph

Supervisors, maintenance men, and others can make quick inplant trips on an agile, compact electric carrier that has a top speed of 10 mph. Powered by a 6-12v battery system and a gear-head motor, it can travel about 25 miles before recharge is required. Battery change can be made a minute or two.

A wheelbase of 32" and a 60" turning radius make carrier easy to maneuver, even in congested areas. Weight is 250 lb, including batteries and built-in charger.

(Electric runabout is built by Kalamazoo Mfg. Co., Dept. FP, 1827 Reed St., Kalamazoo, Mich. . . . or for more information reader may simply check 7035 on the convenient Reader Service slip which is located opposite last page.)

NEW TYPE
ELECTRO-PERMANENT MAGNETIC

UNIT VIBRATOR

introduced by **ERIEZ**

No other Unit (Bin) Vibrator like this! Eriez Magnetic "know-how" brings you the first complete line of Electro-PERMANENT Magnetic Unit Vibrators operating at 3600 CPM directly off an AC line. Just plug or wire them in.

NO RECTIFIER NEEDED

AND LOOK AT THESE ADDITIONAL HI-VI ADVANTAGES

Lower Maintenance and Operating Costs . . . Longer, Trouble-Free Service . . . Versatile Units Provide Broader Operating Ranges with Less Power Consumption . . . HI-VI units are Compact, Lightweight, Easily Installed, never need realigning . . . No Sliding or Rotating Parts to Wear, No Lubricants Needed . . . Noise Factor is reduced, working conditions improved . . . New type "Double Action" drive provides high operating efficiency with low operating cost . . .

ERIEZ HI-VI

Pat. Pending

UNIT BIN VIBRATOR

Don't bang that bin! An **Eriez HI-VI Unit Vibrator** keeps your bulk materials flowing freely and evenly through hoppers, bins and chutes. Prevents pile-ups, arching, bridging and sticking. Any product, in lump or powdered form, is kept moving freely in a steady stream by **HI-VI's** "Double Diaphragm" or kneading action. **Eriez HI-VI Unit Vibrators** work equally well on any hopper, bin or chute, any size or shape. **Eriez HI-VI Vibratory Feeder** is offered also . . . it gives liquid-like flow to bulk materials for even, measured feed, variable from ounces to tons per hour. Same new, exclusive principle is back of its amazing money-saving performance in weighing, batching, proportioning operations.

ERIEZ HI-POWR MAGNETIC SEPARATORS

These products are the latest developments of Eriez Manufacturing Co., world famous producer of permanent-powered Magnetic Separators.

For full information on new HI-VI Vibratory Equipment, write: Eriez Manufacturing Company, 75N Magnet Dr., Erie, Pa.

When inquiring check 7036 opposite last page

Turbo-charged diesels utilize exhaust pressure

Maintenance, fuel costs cut by better combustion

A new GMC highway tractor, with air suspension, lightweight aluminum construction features, and a turbo-charged diesel engine, was presented at the New York Automobile Show early this month. The vehicle is one of the lightest in its weight class in the world. Identified as Model DRA 802, it is rated at 55,000 lb GCW and weighs only 9434 lb., including fifth wheel, trailer connections, 100 gal fuel tank, and 21,000 lb rear axle. This low weight is as much as 600 lb under that of various other units.

The turbo-charged diesels utilize the energy in exhaust gases that would normally be wasted. A turbine, driven by escaping gases, draws fresh air through the air cleaner and delivers it at above-atmospheric pressure to the inlet side of the engine blower. This results in higher specific power output, lower fuel consumption, quieter operation, and better performance at high altitudes.

Shock absorption of the air suspension permits use of aluminum components in lightweight cabs featured on 12 of the basic air suspension models. These cabs have short bumper-to-back-of-cab (BBC) dimensions.

Cab-over-engine models have 72" BBC, while conventional units have 90" BBC. This means that the conventional air suspension tractors, while retaining advantages of this type of cab design, can haul 35′ square-nose trailers in states with 45′ over-all length limitations and 40′ trailers in 50′ states.

(Turbo-charged diesel tractors with air suspension mounting are a development of GMC Truck & Coach Div., General Motors Corp., Dept. FP, 600 South Blvd., East, Pontiac, Mich. . . . or for more information check 7037 on form opposite last page.)

Gives specifications of gear pumps for transportation and plant service

Complete design, performance, and engineering information regarding rotary gear pumps, in sizes from ¼ to 146 gpm, is given in 14-page catalog. Used for transportation, hydraulic, and industrial applications, the pumps are of service in handling such materials as oils, peanut butter, and fuels.

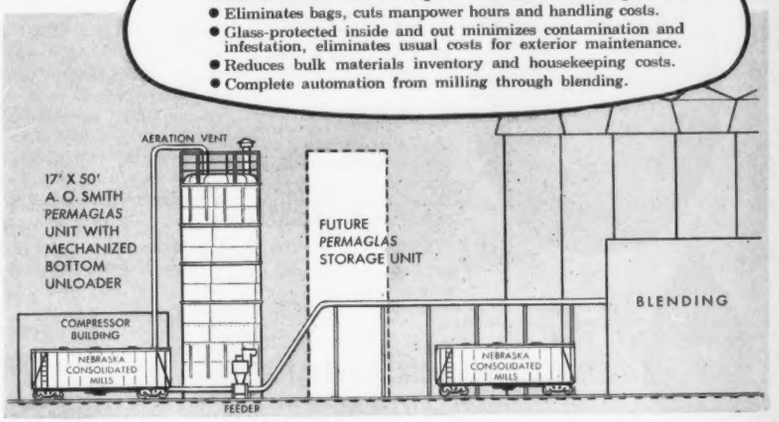
Cat on Northern Nitralloy steel block pumps is issued by Northern Ordnance Inc., Dept. FP-106, Columbia Heights Station, Minneapolis, Minn. When inquiring specify 7038 opp. last page.

Here's more mechanized bulk materials handling NEWS

Processor solves expansion problem...stores more in less space at lower cost...

ALABAMA FLOUR MILLS* — Bulk Flour Handling System with A. O. Smith *Permaglas* Mechanized Storage Unit

- Eliminates bags, cuts manpower hours and handling costs.
- Glass-protected inside and out minimizes contamination and infestation, eliminates usual costs for exterior maintenance.
- Reduces bulk materials inventory and housekeeping costs.
- Complete automation from milling through blending.



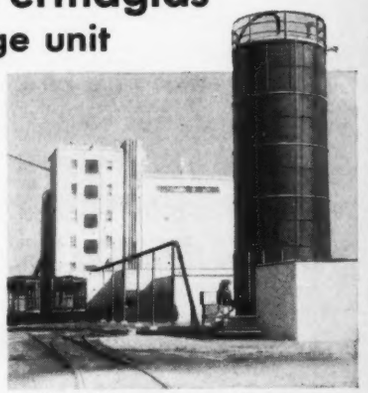
*Division of Nebraska Consolidated Mills Co.

with A. O. Smith Permaglas® mechanized storage unit

ALABAMA FLOUR MILLS' plant in Decatur, Ala. needed more storage space for flour . . . used in blending of different grades. Because of space limitations inside the plant, they found it more economical to install a 17′ x 50′ *Permaglas* Mechanical Storage unit "outside", as shown in photo at right.

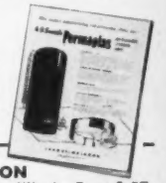
As a result, this customer eliminated the cost of expensive housing because condensation, due to temperature variations outside, need not be a problem with Permaglas Storage units. And with mechanical, sweep-arm, bottom unloading the bulk handling of flour from airslide railroad cars to blending process is completely automatic. What's more, future expansion plans present no space problem with outdoor storage, utilizing *Permaglas* units.

Today, hundreds of *Permaglas* Mechanized Storage units provide low-cost, bulk materials storage and handling for feeds, sugars, grains, wood products, chemical compounds and many others.



BULK FLOUR — 17′ diameter, 50′ high *Permaglas* Mechanized Storage Unit, glass-protected inside and out, is used for storing bulk flour.

Mail coupon for new 6-page bulletin on Permaglas Storage Units with mechanized bottom unloader.



Through research A.O. Smith *. . . a better way*

A.O.Smith
CORPORATION

HARVESTORE DIVISION
Kankakee, Illinois
Distributor: SPROUT-WALDRON
Muncy, Pennsylvania

A. O. SMITH CORPORATION
Harvestore Division • Kankakee, Illinois, Dept. 1-57

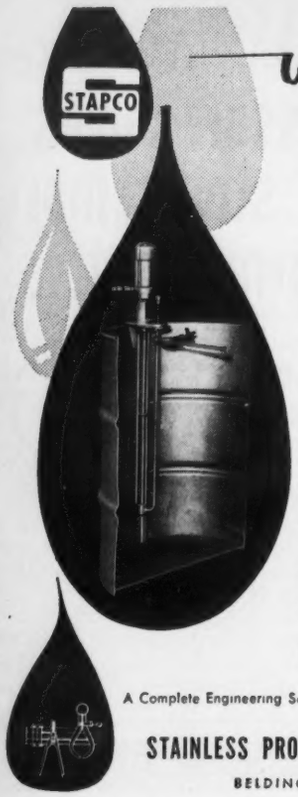
Please send me complete facts about *Permaglas* Mechanized Storage Units.

Name .....

Address .....

City ..... State .....

When inquiring check 7039 opposite last page



IF IT WILL FLOW
Will-Flow
WILL PUMP IT!

Adhesives, inks, chemicals, foods and drugs of semi-solid or heavy liquid consistency are just a few materials efficiently transferred from one point to another through lines by Will-Flow Systems.

Pumped directly from drum-sized containers, materials are fully protected from contamination by Will-Flow. All parts in contact with the product are constructed of 18-8 stainless steel or similar materials. Models available to handle various capacities.

Will-Flow is fully automatic in operation and delivers materials to points of use at uniform pressures without spillage, wastage, or loss through evaporation. Improves plant housekeeping conditions and lowers material handling costs

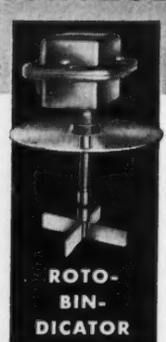
If it will flow, Will-Flow will pump it! Write for full information.

A Complete Engineering Service

STAINLESS PRODUCTS CORPORATION
BELDING, MICHIGAN

When inquiring check 7040 opposite last page

BULK MATERIAL CONTROL
under
Pressure or Vacuum



New Roto-Bin-Dicator mounts outside bin, at any angle, for bin level signaling or machinery control. Material loads on paddle actuate Micro switch in motor housing. Flexible paddle shaft permits use with large or lumpy materials. **Explosion-Proof U. L. Listed Units Now Available.**

BIN-DICATOR
BIN-FLO AERATOR

Low pressure air diffuser assures steady flow of fine, dry materials that tend to pack in storage.

The original diaphragm-type bin level indicator for all ordinary applications.

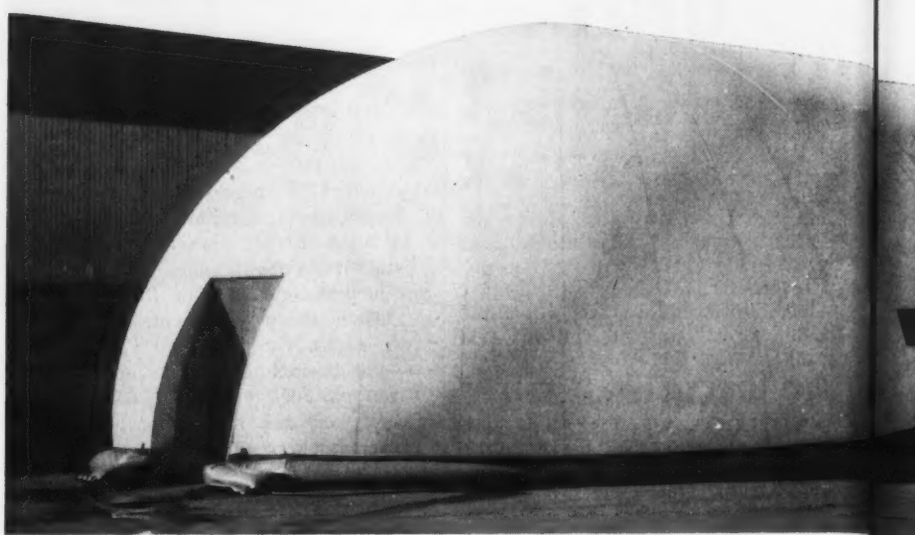
Complete Illustrated Literature FREE

THE BIN-DICATOR CO.
13946-C Kercheval • Detroit 15, Mich.
Phone: VAlley 2-6952

WE SELL DIRECT • PHONE ORDERS COLLECT

When inquiring check 7041 opposite last page

material handling



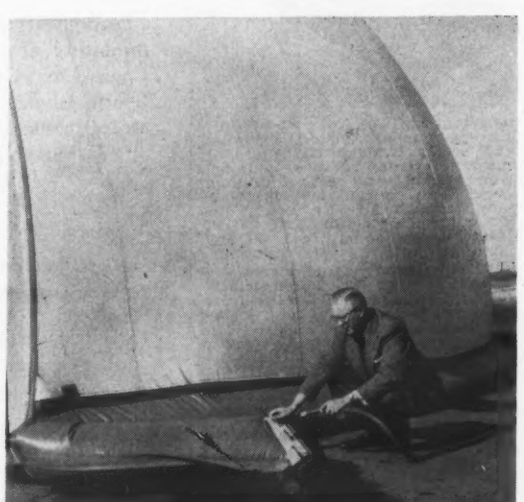
This inflatable warehouse—80 x 40 x 20'—erected in 1 hour —can store 2,000,000 1-lb packages, or house equipment

Fabric warehouse — easily portable — meets processor's need for storage space at low initial investment. Costs little to erect and maintain —

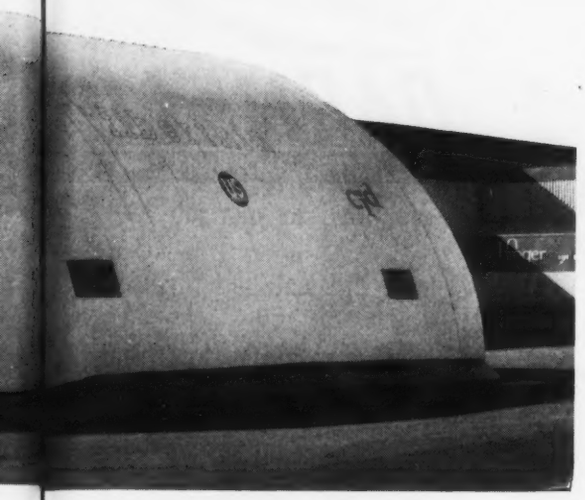
IT'S HELD UP BY AIR!

The dome-shaped structure pictured here is an "Airhouse" — a portable building serviceable in temporary (or more prolonged) storage of finished food products, food materials, equipment, or supplies. It's made of lightweight, vinyl-coated nylon fabric. When erected, the hollow spaces, resulting from piecing together of panels of the fabric, can be filled with air at .10 of an inch of static water pressure. As the air is injected by blower (or compressor), the material bulges outward and upward. The low pressure and tension keep walls and roof taut.

Smallest standard size, shown here, unfolds to overall length and width of 80 x 40′ and inflates to provide 64,000 cu ft of space. Height when erected is 20′. Structures up to 100,000 sq ft in base area are available and even larger sizes can be supplied. Cost is around $1 per sq ft with height of structures being half specified width. The fabric weighs 8 oz per sq yd and resists scuffing, sunlight, weathering, most acids, and alkali as well as gasoline, salt water, mildew, and insects. It has dimensional stability, resists cracking and flame. In addition to its structural uses,



Some 23,000 lb of water in tube extending around base of "Airhouse" anchors it securely. A zipper-type tube permits sand to be used as ballast



it has wide applications in tarpaulins and other protective coverings.

These inflatable buildings are erected on any level site where ditches, or other provisions for drainage, are possible. Floors may be of earth, grass, wood, or various materials. Macadam is particularly suitable in many instances. Vapor barrier floors can be designed for cases where they are desired. No metal or wood supports are required. Building will withstand wind and support snow loads.

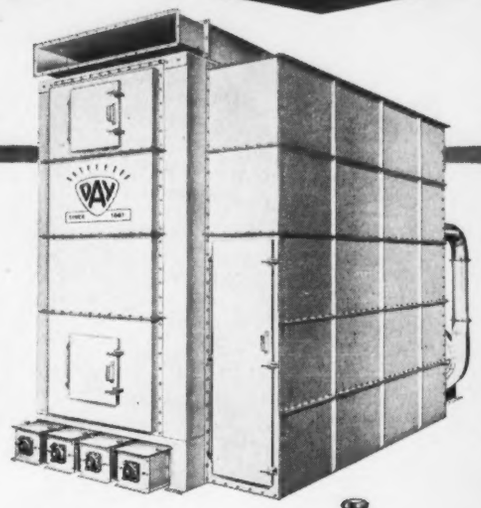
Nature of fabric permits entry of enough light in which to perform general handling operations. Transparent plastic windows are supplied for each side at

(*Continued on next page*)

Vast dome of this cathedral-like structure, supported entirely by low air pressure, covers storage space unobstructed by any supports

DUST CONTROL | **BULK STORAGE** | **PNEUMATIC CONVEYING**

DAY PRODUCTS
SERVE THE FOOD INDUSTRY



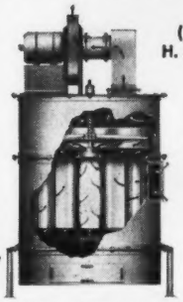
...CONTROLLING DUST

DAY "AC" Reverse-Jet DUST FILTER ● Dollar for dollar, feature for feature, you get more for your money with a DAY "AC" filter. Economical first cost and low maintenance PLUS the fact sub-assembly by DAY saves up to 75% on installation costs. ● Felted filtering media captures sub-micron dust particles with 99.99+% efficiency. Media porosity is maintained by self-adjusting, high pressure, reverse-jet blow rings. ● DAY filters occupy less floor space—need less headroom—are furnished to operate on suction or pressure. ● May be installed inside or outside; outside units completely weatherproof. **Write for Bulletin 559 for complete facts and engineering data.**

(Licensed by H. J. Hersey, Jr.)

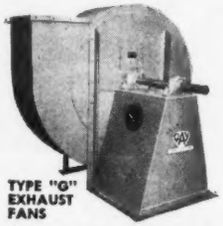
DUAL-CLONE DUST SEPARATOR

Exclusive DAY design provides high efficiency with low horsepower requirements. **Write for Bulletin 49DC.**



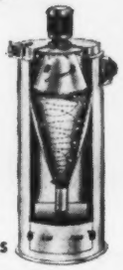
TYPE "RJ" DUST FILTER

Surge of high velocity reverse air maintains filter media porosity of this "packaged" dust filter. 99.99+% efficiency. **Write for Bulletin 560.**



TYPE "G" EXHAUST FANS

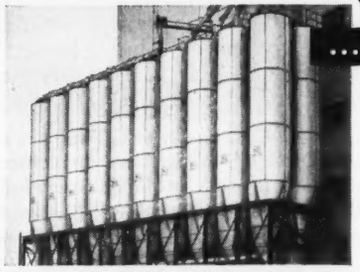
High air delivery per horsepower required. Statically and dynamically balanced; designed exclusively for dust control applications. **Write for Bulletin 471.**



DAY UNIT DUST CONTROLLERS

Complete, low cost unit combines high efficiency of DAY Dual-Clone and Exhauster. Ideal for remote locations. **Write for Bulletin 510.**

A SINGLE UNIT OR A COMPLETE DUST CONTROL SYSTEM

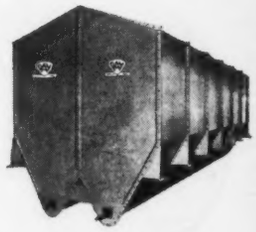


DAY Vertical Type Bulk Storage Bins

...HANDLING AND STORING BULK MATERIALS

Vertical or horizontal bins, special sizes or groups furnished to meet production needs; air lock rotary valves, twin screw feeders and other auxiliary equipment optional. DAY bins need no field riveting, soldering or welding. Built and shipped in easily erected bolted sections. **Write for Bulletins 529 and 549.**

AIR LOCK ROTARY VALVE



HORIZONTAL TYPE BULK MATERIAL BIN

INDIVIDUAL BULK EQUIPMENT UNITS OR A COMPLETE BULK MATERIAL SYSTEM

...PNEUMATIC CONVEYING

DAY Pneumatic Conveyor equipment and systems provide a modern method of bulk material handling. Self-cleaning to prevent contamination or product deposits in system. Speed of operation improves plant efficiency. **Write for details.**

75 YEARS DAY SERVING INDUSTRY SINCE 1881

The **DAY** *Company*

848 Third Ave., N.E., Minneapolis 13, Minn.
P. O. Box 705, Ft. William, Ontario

Branch Plants: Buffalo, Ft. Worth, Toronto
Representatives in Principal Cities

When inquiring check 7042 opposite last page

CHECK THE FACTORS MOST VITAL TO YOU

Whether you're President, Vice-President, Treasurer, Purchasing Agent, Sales Manager, Production Manager, Traffic Manager, Advertising Manager... the above factors in selecting the right shipping containers deserve your personal attention.

Call your nearby Gaylord packaging engineer for boxes made to your prescription.

Gaylord Boxes

SOLID FIBRE BOXES • FOLDING CARTONS
KRAFT PAPER AND SPECIALTIES
KRAFT BAGS AND SACKS

GAYLORD CONTAINER CORPORATION ★ ST. LOUIS
DIVISION OF CROWN ZELLERBACH CORPORATION

When inquiring check 7043 opposite last page

material handling

Portable Warehouse

(*Continued from preceding page*)

Structures arrive at site in compact form. Smallest size slips in bundle 5 x 3', weighing only 400 lb. Spread out flat, it's ready for inflation

20' spacing. Lines for electric lighting can easily be installed. Various types of doors are available.

In supplying these buildings (on lease or outright purchase), individual requirements are surveyed at customer's site. Erection and subsequent maintenance are under organization's field engineers.

("Airhouses" are a development of CID Air Structures Division of Calumet Industrial District Co., Dept. FP, 1501 E, 96th St., Chicago 28, Ill. . . . or for more information check 7044 on form opposite last page.)

("Fiberthin" fabric, used in construction of "Airhouses", is made by United States Rubber Co., Coated Fabrics Dept. 9, Dept. FP, Mishawaka, Ind. . . . or for more information check 7045 opp. last page.)

don't look now —

. . . but there is a message for VIPs only

on page 59

Always SWIVEL and ROLL

DARNELL
CASTERS AND WHEELS

are fitted to your job for more efficient performance —lower cost in the long run!

PRECISION BUILT TO YOUR SPECIFIC REQUIREMENTS

RUBBER TREADS . . . a wide choice of treads suited to all types of floors, including Darnelloprene oil, water and chemical-resistant treads, make Darnell Casters and Wheels highly adapted to rough usage.

RUST-PROOFED . . . by zinc plating, Darnell Casters give longer, care-free life wherever water, steam and corroding chemicals are freely used.

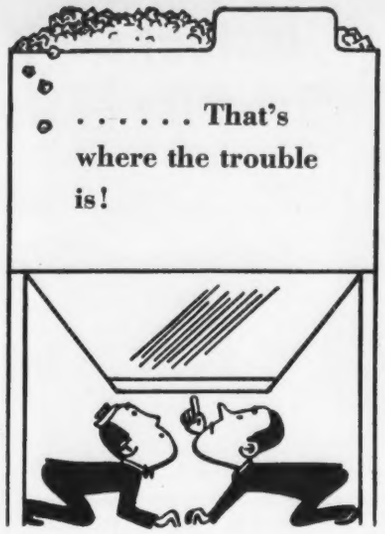
LUBRICATION . . . all swivel and wheel bearings are factory packed with a high quality grease that "stands up" under attack by heat and water. Zerk fittings are provided for quick grease-gun lubrication.

STRING GUARDS . . . Even though string and ravelings may wind around the hub, these string guards insure easy rolling at all times.

Free Manual

DARNELL CORPORATION, LTD.
DOWNEY (LOS ANGELES COUNTY), CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

When inquiring check 7046 opposite last page



"What do you recommend?" asked the candy manufacturer. We recommended a Type F Cleveland Vibrator, and now his nut meat bins are no longer a production bottleneck.

Many food processors have found Cleveland Bin Vibrators an economical solution to their bulk handling problems. And your employees will appreciate the new silent vibrators that do the job without a murmur.

Tell us about your particular stymie, or ask for our detailed literature. We're sure there's a CLEVELAND to fit your requirements.

AIR *and* ELECTRIC

2818 Clinton Ave. • Cleveland 13, Ohio

When inquiring check 7047 opposite last page

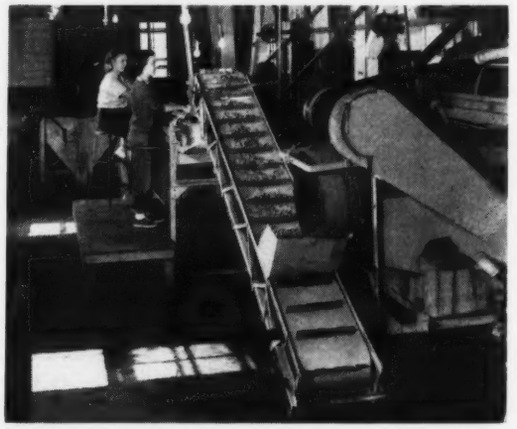
Stainless flights permit 35° elevation to picking table

W. R. WOLLUM, Vice President
Owen Canning Company
As reported by **FP Staff**

Problem: At Owen Canning Co., Owen, Wis., a gooseneck bucket elevator was used to carry blanched peas and beans from dewatering reel to picking tables. Cleaning was extremely difficult and time-consuming, even when using a steam gun and cleaner. Rods and rollers had to be replaced frequently with interruption to production.

Solution: By equipping belt with lightweight, but durable, stainless clips (which form flights), vegetables can be elevated at an angle of 35° to a height of six feet.

Belt — made of Koroseal — is impervious to water, grease, vegetable juices and withstands temperatures to 150°F. As operations must be carried on in a humid room these properties are especially welcome in eliminating the problem of mildew.



Belt with stainless flights elevates beans at 300 fpm—resists temperatures to 150°F

Results: Cleaning, formerly requiring excessive time and labor, now involves only a few easy, quick operations. During the two seasons the conveyor has been in service no special maintenance has been required. Also, there is no longer any spillage. Remaining service life of belt is estimated at three years. Cost of the new system is much less than the original installation.

(Conveyor system featuring stainless flights was engineered and installed by W. S. Nott Co., Minneapolis, Minn. Koroseal belt used is product of B. F. Goodrich Co., Dept. FP, Akron, Ohio . . . or for more information check 7048 on form opposite last page.)

HERE'S A BETTER WAY TO . . .
CONVEY LIGHT PRODUCTS!
Freshly packaged cheese sections emerge from automatic packaging machine and are conveyed smoothly and quickly to labelling machine—products received no handling—remain fresh and clean.

WITH WENDWAY

Wendway is ideal for conveying fresh-unwrapped meat. Stainless steel belting is recommended.

Cartons or packages ride perfectly on Wendway's smooth, silent belting.

Wendway is the most versatile conveyor in Industry today. With Wendway, you can eliminate the multiple handling of products, save man hours and floor space. You can have remote-controlled efficiency in conveying any light products to any point in your plant. Wendway turns corners, goes up-down in single or multiple tiers—and Wendway's steel wire belting is ideal for handling *anything* up to approximately twenty pounds per package.

Then too—Wendway does not sag or accumulate oils or dirt like *ordinary* belting. It can be kept highly sanitary—easily.

But best of all—Wendway will pay for itself in actual savings.

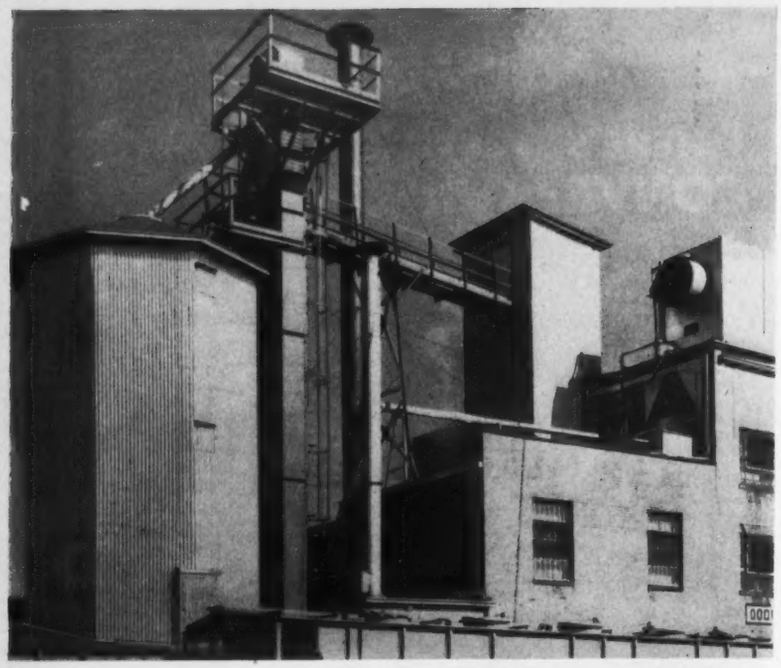
If you have a light package conveying problem—why not use the coupon below or write today for full details on this versatile conveying system.

USP

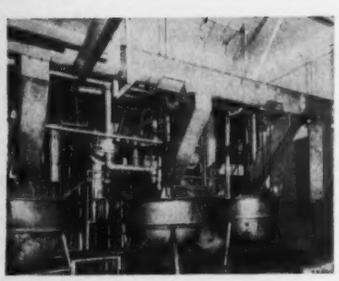
Gentlemen:
Please send me additional information about Wendway for conveying_____.
Name_____
Company_____
Address_____Zone____State_____
Have a USP Conveyor Engineer contact me at once ☐

UNION STEEL PRODUCTS COMPANY
ALBION, MICHIGAN

When inquiring check 7049 opposite last page



Continental **Sugar-Handling Installation**
In South's Largest Fruit Preserving Industry
CUTS COSTS—SPEEDS PRODUCTION



Bulk sugar is deposited in kettles batch-weighed to accuracy of 1%.

The Bama Company recently called on Continental to design, lay out, fabricate and erect an integrated sugar-handling system for their plant in Birmingham. It moves bulk sugar from enclosed hopper-bottomed railroad cars to storage or to plant at the rate of 24 tons per hour, batch-weighing to kettles to an accuracy of 1%.

"Outstandingly efficient and completely satisfactory in every way," says W. E. Hanks, The Bama Company secretary. "It has helped us in a big way in speeding production and cutting costs, and requires a minimum of maintenance. We are now installing another Continental system at our Houston plant."

The Bama Company is the South's largest fruit preserving industry, and one of the nation's first six in sales.

In many food processing plants, precision made Continental Materials Handling Equipment is giving top performance. Your problem is not too small or too large for us — call on your nearest Continental office.

CG-5709

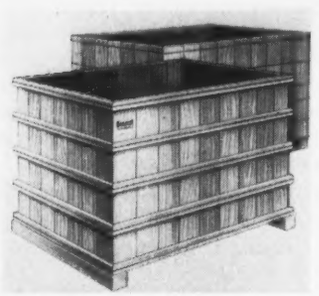
INDUSTRIAL DIVISION
CONTINENTAL GIN COMPANY
BIRMINGHAM, ALABAMA
CGC
ATLANTA CLEVELAND DALLAS KNOXVILLE
MEMPHIS MOBILE NEW YORK 17

When inquiring check 7050 opposite last page

Standardized boxes aid harvest, shipment

A wide range of handling requirements is covered in a standardized line of bulk containers for vegetables and fruits.

Standard size wirebound pallet boxes, mass produced and sold

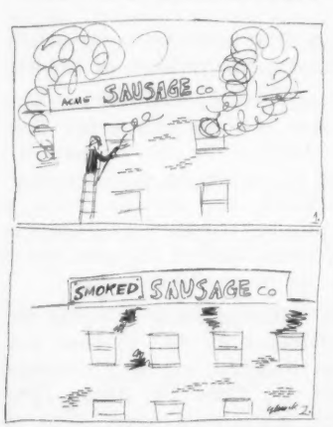


Heavy duty and lighter boxes for vegetables

from stock, are designed to handle 500 to 2000 lb loads of fresh produce in harvesting, storing, processing, and shipping operations.

A heavy duty pallet box, with outside cleats, is provided for ton loads of bulky produce such as potatoes, onions, carrots, corn, and fruit.

(Boxes are made by General Box Co., Dept. FP, 1825 Miner St., Des Plaines, Ill. Check 7051 opposite last page.)

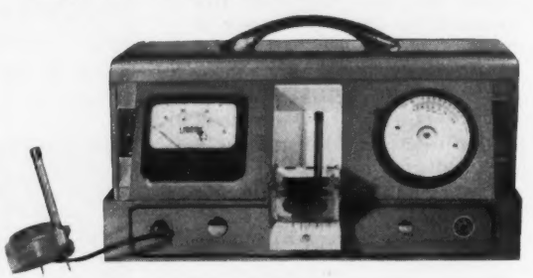


Instant LOW Moisture Tests
on: . . . Starch
Saltine Crackers
Cookies

. . . Plus other "difficult" products

Newest and most versatile moisture tester yet, the Model "AA" Universal is the first to measure fractions of 1% to over 25%. Precision tests anywhere in your plant or laboratory.

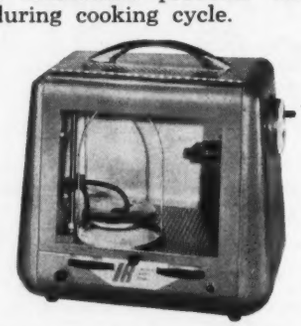
One of a complete series of Universals. Write today for full information.



ELECTROPROBE

30 second testing of semi-liquid and semi-solid formulated products either cold or during cooking cycle.

***I-R MOISTURE-MATIC BALANCE**



Dries, times, weighs and records moisture percent all automatically. For any product that can be dried by heat.

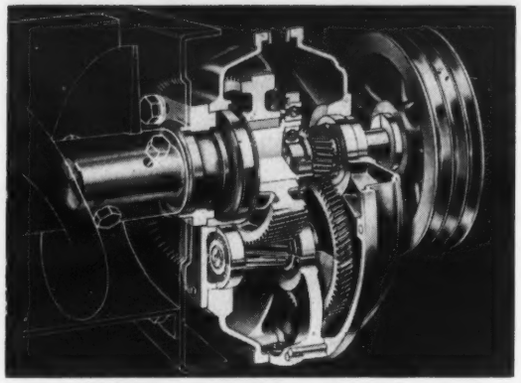
*Infrared

MM CORPORATION

A moisture tester for any and every purpose—batch testing or continuous recording and regulating.

MOORE-MILFORD CORPORATION
Manufacturers • Engineers • Consultants
1316 Sherman Avenue • DAvis 8-7168 • Evanston, Illinois

When inquiring check 7052 opposite last page



Drive bolts to trough end; used for conveyors that are horizontal or at angles to 20°

Compact speed reducer bolts to trough end of screw conveyor

Eliminates drive end shaft; seals out dust

Uses: Especially designed for screw conveyor applications.

Features: Direct drive shaft for conveyor eliminates need for separate drive-end shaft. Drive shaft support bearings are integral part of unit eliminating drive-end bearing, otherwise necessary. Dust seal eliminates need for auxiliary seal ordinarily used to meet dust conditions.

Description: This compact speed-reduction unit has flange adapter for bolting directly to trough end of conveyor. Output shaft fits into end of pipe of standard 6, 9 or 12" screw having a bore of 1½, 2 or 2-7/16".

Input shaft of the unit is driven from motor of any make or type by a short center V-belt drive. Drive is made in three sizes from ½ to 10 hp and each with three reduction ratios: 5 to 1; 13 to 1; and 20 to 1. Unit provides any screw conveyor speed between 15 and 290 rpm with adjustable speeds available if desired. Trough ends are available for 6, 9 and 12" conveyors.

(Screw-King drive is built by The American Pulley Co., Dept. FP, 4200, Wissahickon Ave., Philadelphia 29, Pa. Check 7053 opposite last page).

NEXT MONTH —

Read how Piel Brothers brewery has eliminated eight hours weekly downtime with self-cleaning pneumatic conveyor system for grit and malt

ANY LENGTH YOU WANT TO SUIT YOUR REQUIREMENT

The "HAMMOND" Screw-Veyor

. . . DOES AWAY WITH Old Fashioned "U" Shaped Boxes

STREAMLINED TUBULAR CONSTRUCTION

ALWAYS IN POSITIVE ALIGNMENT

NO DISTORTION

DUST-TIGHT MOISTURE-PROOF

INSURES SAFETY AND ELIMINATES FIRE HAZARD

. . . The most outstanding improvement in conveyors in a decade. Each screw length is suspended in patented bearings, removing all structural load from the casing. Runs as smooth as a machine. . . Rigid—Flexible—Accessible. WRITE FOR FORM M-600-2.

This discharge end assembly combined with any number of intermediate assemblies and a feed end assembly forms a complete conveyor system to suit any condition.

Write for Form M-600-2

Screw Conveyor Corporation

701 HOFFMAN STREET • HAMMOND, INDIANA

WINONA, MISSISSIPPI — HAMMOND PRODUCTS — SANTA CLARA, CALIFORNIA

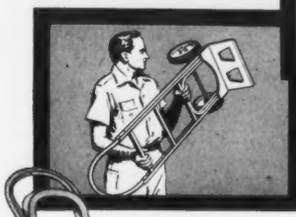
ENGINEERS MANUFACTURERS

TRADE MARK REG. U.S. PAT. OFFICE

When inquiring check 7054 opposite last page

Magliner Magnesium Hand Trucks Deliver

maximum performance



with minimum weight!

Magliners are America's fastest selling hand trucks because they deliver greater work output ...last longer...weigh less! With Magliners, your men push the load, not the truck . . . save time, effort, money with every step! Made of light, strong magnesium, Magliners weigh only ¼ as much as ordinary hand trucks, yet are equal *or superior* in strength and payload capacities. Of all-mechanical construction, Magliners give added years of low-cost, dependable service.

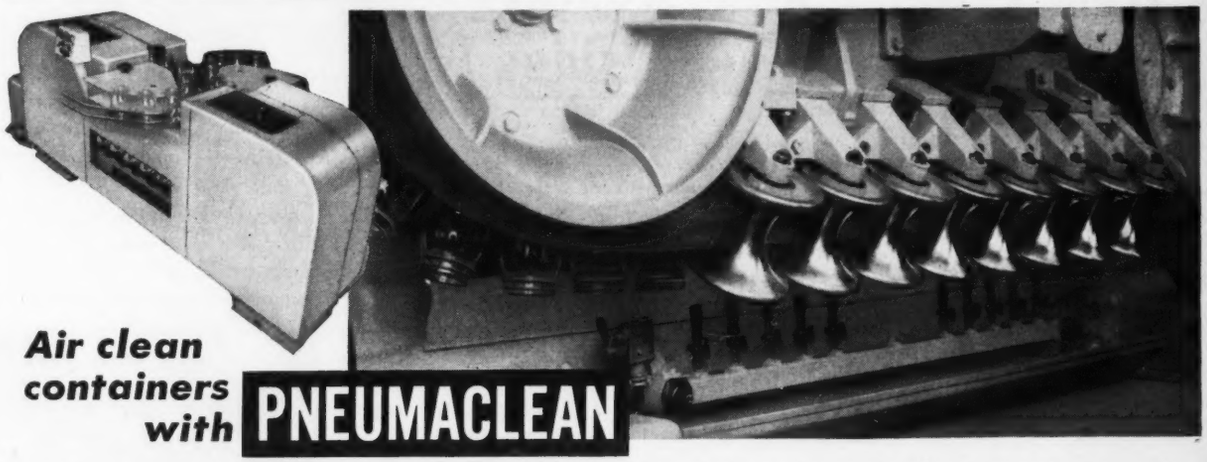
Here's an extra advantage you get only with Magliners! You can now custom design the Magliner hand truck you want from more than 200 available combinations. Bulletin HT-101 tells how. Send for your copy today!

MagLiner

MAGLINE INC.
P.O. Box 381
Pinconning, Michigan

In Canada: Magline Of Canada, Ltd., Renfrew, Ontario

When inquiring check 7055 opposite last page



Air clean containers with PNEUMACLEAN

IT'S NEW • IT'S FAST • IT'S GENTLE

Old techniques of container handling go by the board with the development of Pneumaclean and its revolutionary new principles of operation. It offers fully inverted air cleaning for nearly all types of containers. Glass and otherwise fragile containers are handled in a continuous noiseless operation—with an action more gentle than ever found in previous methods.

All dust and foreign particles such as glass splinters and lint are removed at speeds of 500 containers per minute.

A pair of softly resilient, heavy-duty neoprene tubes serve to control the containers as they pass through the machine. Inflated with two pounds air pressure, these tubes travel continuously gripping the upright containers to invert them in a constant procession over two series of air jets—then returning them upright, thoroughly cleaned and ready for filling. Machine is completely flexible since no change parts are involved. Pneumaclean sets a pace that keeps production moving at a money saving rate.

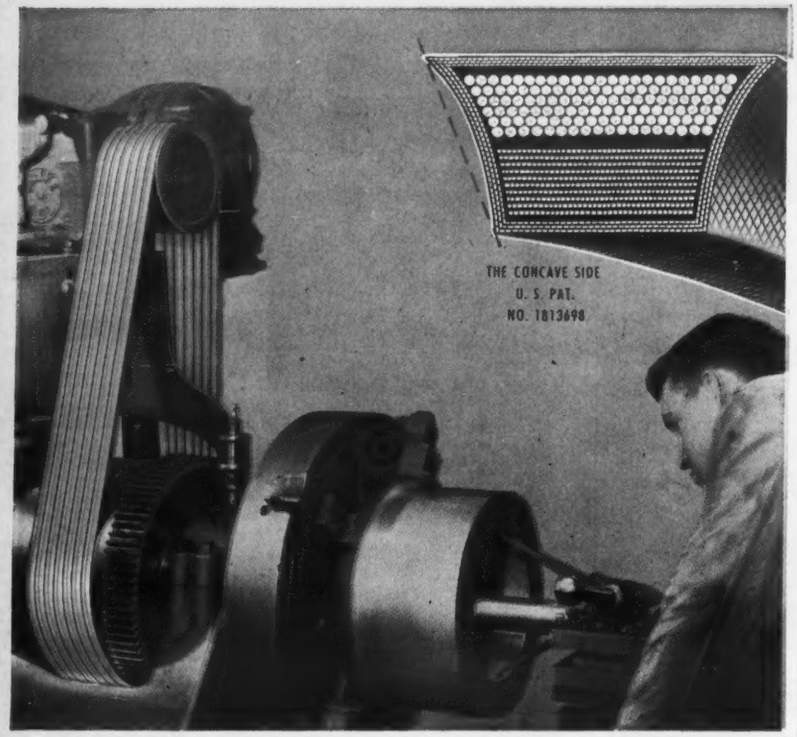
Write for Bulletin No. 134 for more details on this faster, more flexible method of air cleaning.

PNEUMATIC

PNEUMATIC SCALE CORP., LTD., 67 Newport Ave., Quincy 71, Mass. Also: *New York; Chicago; Dallas; San Francisco; Los Angeles; Seattle; Leeds, England. Canadian Division: Delamere & Williams Company, Ltd., Toronto.*

Packaging and Bottling Equipment

When inquiring check 7056 opposite last page



WHY you get more service from V-Belts with concave sides

Each sidewall of a Gates V-belt is concave (Fig. 1) — a precisely engineered curve that makes V-belts last far longer.

Fig. 1

Fig. 1-A

HERE'S WHY: on the bend around the sheave, the concave sides of a Gates V-belt fill out and become straight (Fig. 1-A). Thus the belt makes full contact with the sides of the sheave, grips the sheave *evenly*.

This even contact distributes wear uniformly across the sides of the belt. Uniform wear lengthens belt life; keeps costs down.

MAKE THIS SIMPLE TEST

Fig. 2

Fig. 2-A

Bend a straight-sided belt (Fig. 2). The sides bulge at the bend causing uneven contact in the sheave groove (Fig. 2-A). Naturally, wear is greater at points indicated by arrows. Result: shorter belt life, increased belt costs.

To cut down-time and V-belt replacement costs, specify belts that grip evenly and wear longer. Specify Gates Vulco Rope — the V-belt with concave sides. The Gates Rubber Co., Denver, Colorado — *World's Largest Maker of V-Belts.*

There are Gates Engineering Offices and Distributor Stocks in all industrial centers of the United States and Canada, and in 70 other countries throughout the world.

Gates

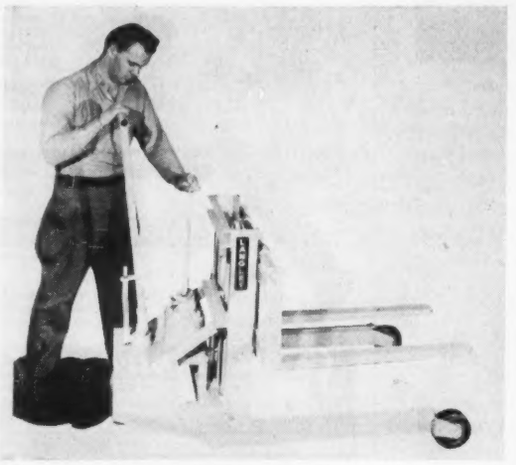
TPA 109A

Gates Vulco Rope Drives

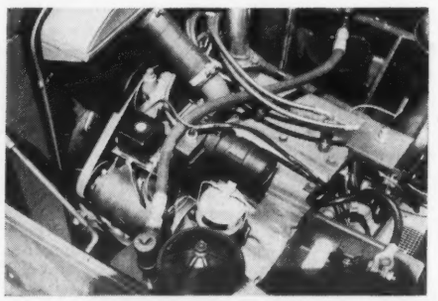
When inquiring check 7057 opposite last page

New developments in fork lift trucks

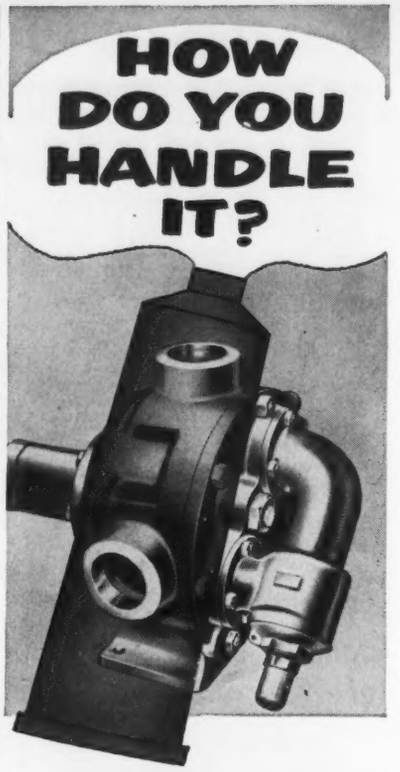
design innovations, ingenious accessories improve performance, safety, ease of operation



Skid and high lift or pallet jobs are all performed with equal ease with new hand hydraulic straddle model. Adjustable straddle legs accommodate skids or pallets with widths 30 to 48", lengths to 48". Forks adjust to such desired levels as 3, 4" and up to 12". Where much higher lift is essential. Lifts to 96" can be furnished. (Model 57 truck is built by Langley Mfg. Co., Dept. FP, Cambridge, Mass. . . . or check 7058 on form opposite last page.)



Spark-proofing gas-type industrial trucks for safe operation where hazardous elements are present, is performed with a kit for shielding electrical system. Installed only at truck factory, it prevents sparks being exposed. Included are shielded distributor, ignition coil, and sealed cables, plus shields for the standard generator. Lat-



PUMP IT WITH A VIKING

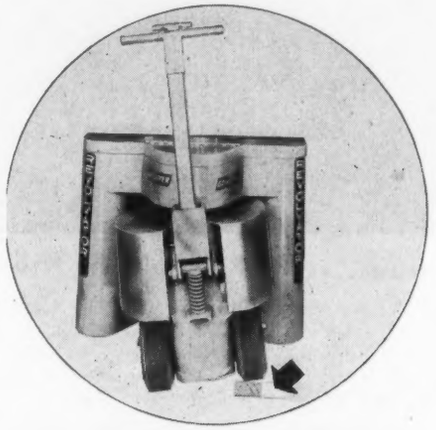
Here's the answer to your problem of moving semi-solid materials of types usually dispensed in squeeze tubes. With Vikings you can pump such materials as tooth paste, shaving cream, petroleum jelly and many others, in a smooth-even flow. Hundreds of plants are doing it.

Viking's simple, rugged "gear within a gear" principle makes it adaptable to most pumping needs. There are 750 catalogued models and thousands of specially built pumps and units. If you have a pumping problem, call on Viking Pumps for assistance. Ask for bulletin 57Sep.

VIKING PUMP CO.
Cedar Falls, Iowa, U.S.A.
In Canada, it's "***ROTO-KING***" pumps
SEE OUR CATALOG IN SWEETS

When inquiring check 7059 opposite last page

ter enclose vents to prevent entry of foreign matter. Kit should not be confused with Underwriters Laboratory Inc. GS specifications covering muffler and exhaust temperatures. (Kit converted trucks are available from Lamson Mobilift Corp., Dept. FP, Syracuse 1, N.Y. . . . or check 7060 on form opposite last page.)

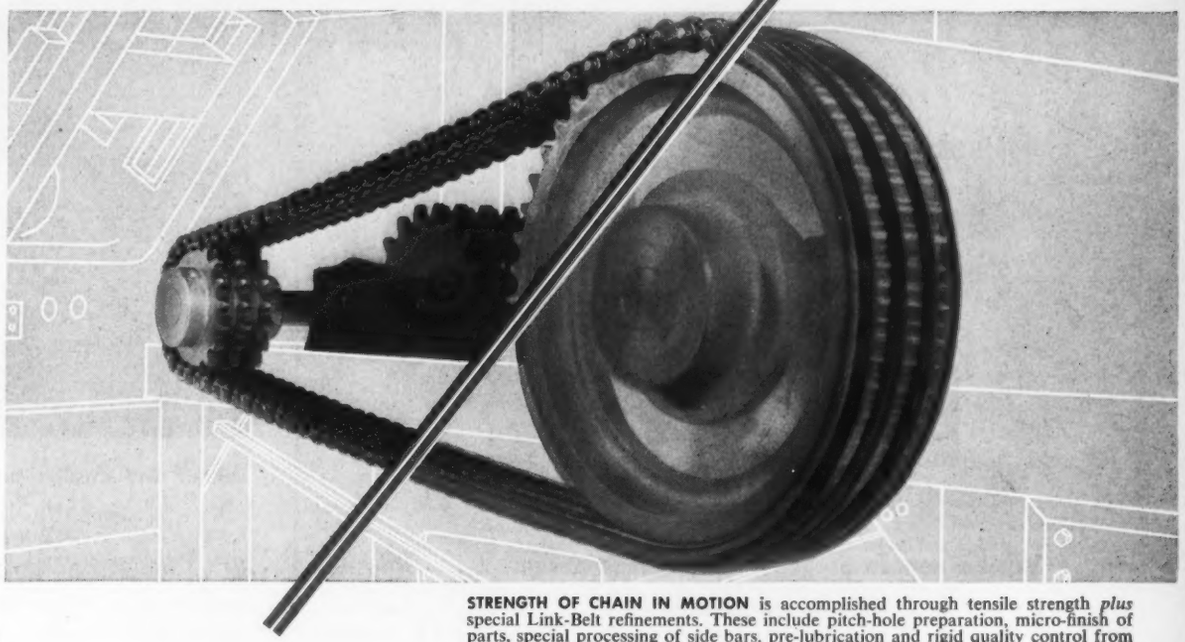


Unusual traction over uneven floors, by electric "walk-along" trucks is possible through 1⅝" articulation (arrow) of power drive wheels. In addition to this feature of its differential-type dual drive wheel unit, truck has automatic "deadman" braking and controls at operator's fingertips. (Go-Getter trucks are built by the Revolvator Co., Dept. FP, 86th St. at Tonnelle Ave., North Bergen, N.J. Check 7061 opposite last page.)

Articulated clamp pads compensate for variations in height of pallet loads. Each pad adjusts independently in required direction so entire load is steady. Each pad is bonded to metal arm. Photo illustrates first showing of this accessory at recent Soft Drink Exhibition, in which it was mounted on maker's Spacemaster Model "J". Capacity 2000 lb at 24" load center. (Clamp pad attachment is made by Lewis-Shepard Products, Inc., Dept. FP, 1056 Walnut St., Watertown, Mass. . . . or check 7062 opposite last page.)

Not just static strength, but . . .

RESISTANCE TO TENSILE STRESS is achieved by use of properly heat-treated, accurately-machined side bars made of premium steel and fitted with properly-hardened pins, bushings and rollers. But to resist *operational* stresses, additional controls over dimensional accuracy, uniformity and roller resiliency are essential.



STRENGTH OF CHAIN IN MOTION is accomplished through tensile strength *plus* special Link-Belt refinements. These include pitch-hole preparation, micro-finish of parts, special processing of side bars, pre-lubrication and rigid quality control from initial selection of materials to final protective boxing.

dynamic strength

assures longer work-life for LINK-BELT Roller Chain

In addition to known tensile loads, roller chain in motion is frequently subject to other operating stresses. Engagement with sprockets . . . shock of starting loads . . . centrifugal loads—there are many similar stresses.

Link-Belt's solution: greater dynamic strength, achieved through design, manufacturing and processing "extras" . . . plus a combination of other important refinements. And you see the results in smoother, more efficient performance that lasts measurably beyond the life of ordinary roller chain—cuts your drive and conveying costs.

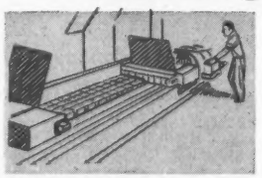
Near you is a Link-Belt office or authorized stock-carrying distributor where you can get full information on the complete Link-Belt range of single and multiple widths, ¼ to 3-inch standard pitch, and 1 to 3-inch double pitch. Ask for your copy of 148-page Data Book 2457.

LINK-BELT

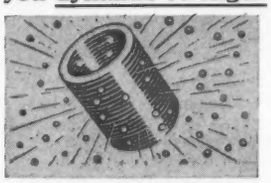
ROLLER CHAIN & SPROCKETS

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office: New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World. 14,121

LINK-BELT gives you dynamic strength that comes from these important EXTRAS



PRE-STRESSING of multiple width chain provides uniform load distribution.



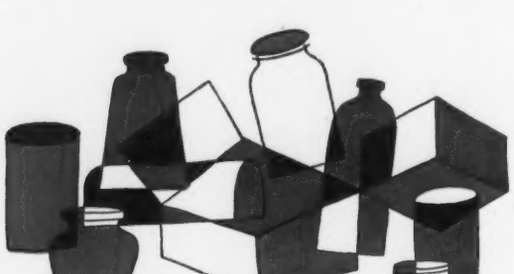
SHOT-PEENED ROLLERS have greater fatigue life, added ability to withstand impact.

CLOSER HEAT-TREAT CONTROL —coupled with rigid testing insures uniformity.

LOCK-TYPE BUSHINGS (applied on a range of sizes) end a cause of stiff chain.

When inquiring check 7063 opposite last page

PACKAGING VIEWPOINT



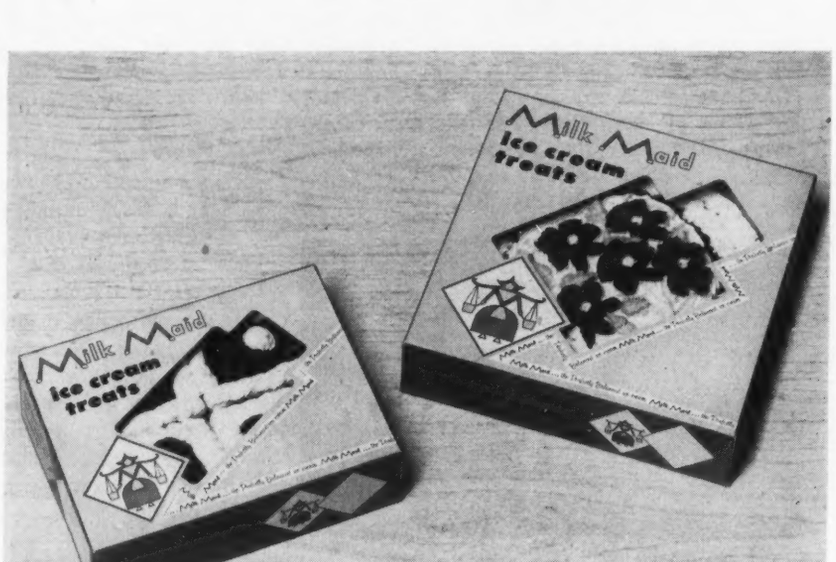
What's new in products and package design . . . a pictorial presentation . . .

Larger and smaller plastic containers . . .

. . . for ice cream, salads, nuts, etc., are currently offered by Premium Plastics, Inc. New sizes are half-pint and one gallon. With the usual pint, quart, and half-gallon sizes, line is extended to five sizes. Containers are made of high-impact polystryene, with principal feature, of course, being the see-through ability. Premium Plastics, Inc. is located at Dept. FP, 2440 S. Indiana Ave., Chicago 16, Ill. . . . or for more information check 7064 on form opposite last page.

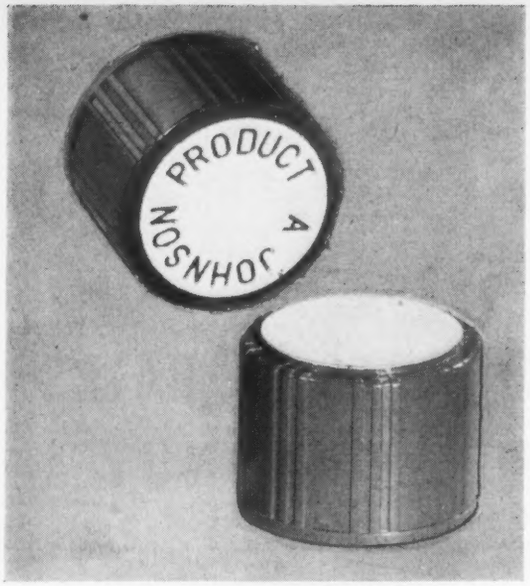
Foil-lined carrier for beer . . .

. . . is now being used by Peter Bub Brewery in Winona, Minn. Lining is gold foil, and carriers' are wrap-around type which can be filled automatically. They are one-piece and include handle for easy carrying. Design features brand name against background of old-fashioned stein, kilns, and barley stalks. Supplier is Robert Gair Div., of Continental Can Co., Dept. FP, 155 E. 44th St., New York 17, N. Y.



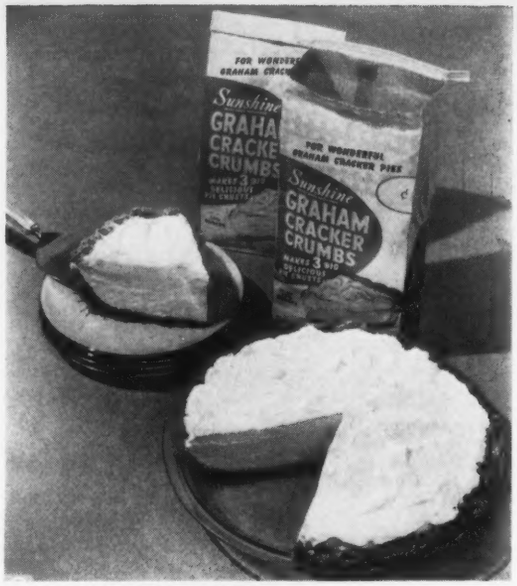
Windows for ice cream novelties . . .

. . . are just one of the features of unusually designed cartons used by Milk Maid Ice Cream Co. of White Plains, N.Y. Two carton sizes are used for ice cream pies, tarts, and eclairs — 8 x 8 x 2" and 7½ x 5⅝ x 2". Soft pinks and greens are used for background colors, and company catch phrase, "the perfectly balanced ice cream", is prominent. Carton supplier is Sutherland Paper Co., Dept. FP, 243 E. Paterson St., Kalamazoo, Mich.



Plastic closures with price spots . . .

. . . are now available from Owens-Illinois, in answer to long-standing problem facing grocers seeking to speed up price-marking. Two types of these molded closures are made, one has a plain spot consisting of raised section on top of cap; the other is also raised but includes debossed lettering for brand name. Closure Sales Div., Owens-Illinois Glass Co., Dept. FP, Toledo 1, Ohio. Check 7065 opp. last page.



For home-baked pie crusts . . .

. . . come these packaged graham cracker crumbs from Sunshine. Inner-lined bag holds enough crumbs to make three 9" crusts. Bag liner is waxed paper, and bag is closed with tin-tie fold-over top. Package is done in red, yellow, and white, includes three recipes on sides—one for the crust itself, one for lemon chiffon pie, the other for banana cream pie. Product is now in national distribution.

Wilson switches to paper label . . .

. . . for their "Bake-rite" shortening, displacing former can lithographs. Six different paper labels are used, each picturing in four colors, a baked food which can be made with the shortening. Blue background and white cloud trademark are retained from old label. Recipes are also included on new label. They will be changed four times yearly—with current ones being for lattice top cherry pie and fried chicken.

Sliced frozen apples . . .

. . . for pies and sauces are new product of Goldman Foods of Sturgeon Bay, Wis. Polyethylene bag, with help of sulfur dioxide and citric acid added to product, keeps apples in good condition in store and home freezers. Initial reports indicate excellent reception of product in retail markets. Bag supplier is Visking Corp., Dept. FP, 6733 W. 65th St., Chicago 38, Illinois.

Dehydrated seafood in soup mix . . .

. . . is recent import from Liebig of Paris by Regina Trading Corp. of New York, and is currently being distributed on nationwide basis. Each packet of the fish chowder mix serves four to six persons, needs only addition of water and boiling to prepare. A "chef's suggestion" is printed on back of package, recommending addition of small pieces of garlic bread to finished soup.

'Large economy size' for Log Cabin . . .

. . . arrives with addition of this 48 oz can for syrup. White background plus three-color illustrations provide striking label. Family identification is provided by large red oval bearing brand name, similar to labels on well-established 12 and 24 oz bottles. Can supplier is Can Div. of Crown Cork & Seal Co., Inc., Dept. FP, 9300 Ashton Rd., Philadelphia 36, Pennsylvania.

Kiefer's Streamlined SYNCHRONIZED BOTTLING LINE

Unequalled in appearance . . . unequalled in action . . . and naturally it must be unequalled in construction . . . it's a KIEFER!

Speed that is amazing . . . minimal breakage . . . noise reduction up to 75% . . . greatly lowered employee-fatigue which makes for top production . . . reduced labor costs.

Functioning as one unit: "Bottoms-Up" Cleaner, Rotary Vacuum Filler, Capper, Chain Belt Conveyor.

America's De Luxe Synchronized Line . . . the biggest value for dollars spent.

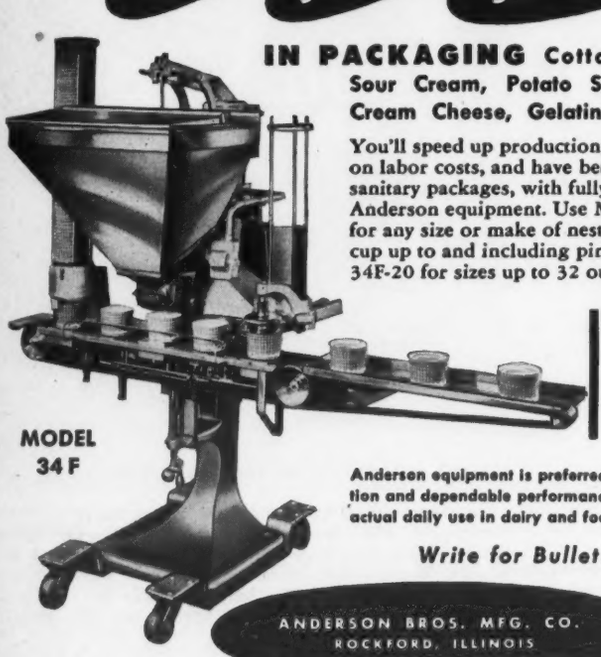
The Karl Kiefer Machine Co.

934 MARTIN ST., CINCINNATI 2, OHIO, U.S.A.

NEW YORK • BOSTON • CHICAGO • SAN FRANCISCO • HOUSTON • PHILADELPHIA SAVANNAH • LOS ANGELES • LONDON, ENGLAND

When inquiring check 7066 opposite last page

SPEED... SANITATION... SAVINGS...



IN PACKAGING Cottage Cheese, Sour Cream, Potato Salad, Honey, Cream Cheese, Gelatine Salads

You'll speed up production, save a fortune on labor costs, and have better, more sanitary packages, with fully automatic Anderson equipment. Use Model 34-F for any size or make of nesting round cup up to and including pints . . . Model 34F-20 for sizes up to 32 ounces.

DISPENSES—FILLS AND CAPS 18-58 PER MINUTE

MODEL 34 F

Anderson equipment is preferred for simple operation and dependable performance — proved by actual daily use in dairy and food plants.

Write for Bulletin 1-45

ANDERSON BROS. MFG. CO.
ROCKFORD, ILLINOIS

When inquiring check 7067 opposite last page

Automatic packaging operation installed at San Francisco Brewing Corp.

CARTONS QUARTS IN PAIRS AT 180 CANS PER MINUTE

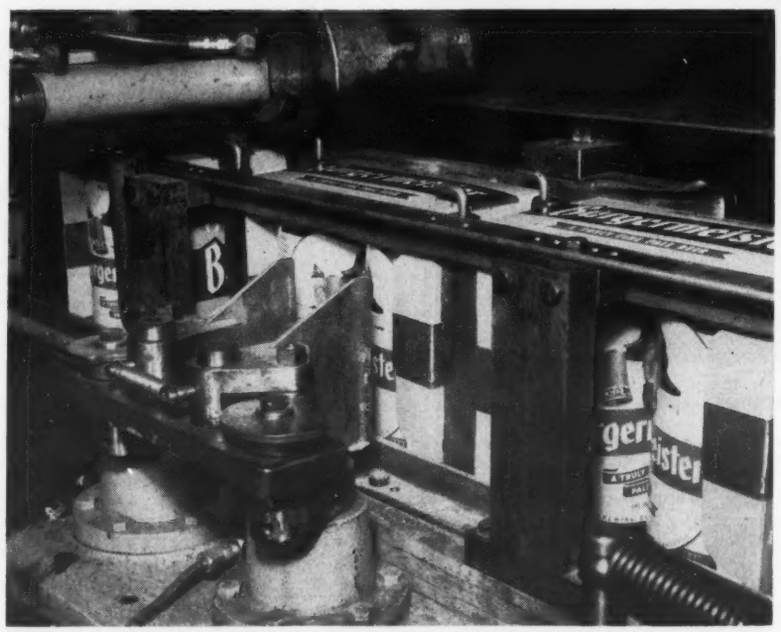
First on the Pacific Coast to package quart cans of beer in double can carriers was San Francisco Brewing Corp., makers of Burgermeister beer. Cartoning operation is completely automatic, produces now about 90 cartons per minute, although capacity of line is estimated at 110 cartons per minute. Entire automatic line was engineered and installed in just six weeks.

Continuous cartoner occupies linear space of only eight feet. Single file of cans enters unit, and cans are guided into automatically set-up cartons by simple diagonal guide-rail arrangement. No glue or staples are used — cans are held in place by specially-designed side flaps, tucked in by steel fingers as carrier passes through machine.

The cartons, as seen in the picture, have

Automatic equipment packs two quart cans to the carton, without use of glue or staples ▶

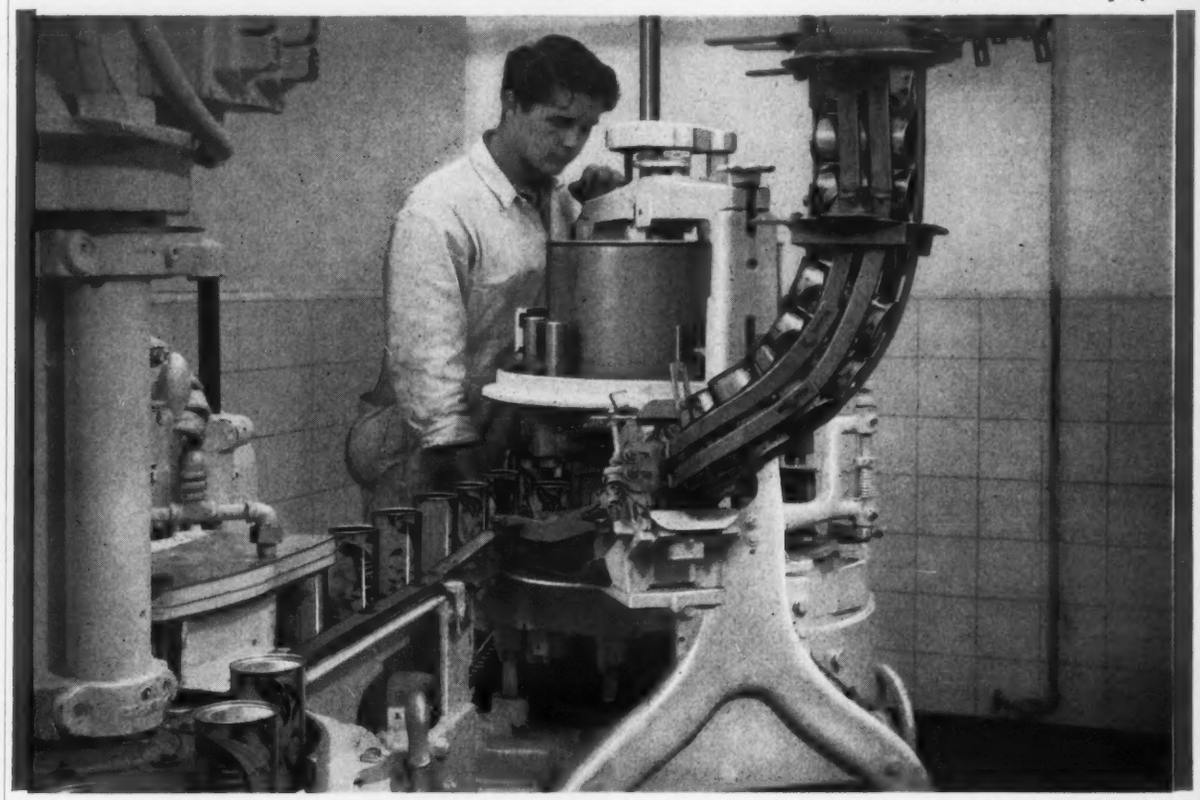
Close-up shows how steel fingers tuck in side flaps on ▼ the twin-pack cartons



two sides almost completely open, leaving trade mark identification to the can labels themselves. This feature also permits quick cooling of the beer — with closed tops keeping dust off can tops on retailers shelves. Cartons are printed in three colors.

(Cartons and cartoning machinery are supplied by Andre Paper Box Co., Dept. FP, 1950 1st Ave., San Leandro, Calif. . . . or for more information check 7068 on form opposite last page.)

"Our FMC M&S Filler has performed excellently in all respects" ---------- Says C. W. REYNOLDS, Manager Products Division, Ventura Coastal Lemon Company



"...We use this 6 pocket M&S Filler almost entirely on 211x414 cans, operating at a speed of 216 cpm on citrus juice concentrates. On occasion we have also used it for filling 202x214, 202x314, 307x409, and 404x414 cans. In 3½ years we have averaged over a quarter of a million cans a day, two 20-hour days a week, 6 to 8 months a year. Repairs have been minor."

These fillers give you a higher case yield per batch of product

FMC—M&S Plunger or Piston Fillers are built in 6, 9, 10, 15, 20 and 30 pocket sizes. They are designed on the time-proven principle of product pre-measurement and positive ejection into containers by precision pistons. Ideally adaptable to a wide range of liquid, semi-liquid and heavy semi-solid products.

Send for free copy of Bulletin No. 501E, "Fillers by FMC."

FMC offers fillers of highest speed and accuracy for every food filling job — from liquids to semi-solids. By actual comparison testing, M & S positive displacement type fillers give you the four things that you want most in a filler —

1. *High Accuracy*. Exclusive pre-measuring principle of M&S insures consistant filling accuracy for higher case yield per batch of product.

2. *Low Maintenance*. Rugged construction and precision engineering of M&S assures long life and dependability under the heaviest production requirements.

3. *High Speed Operation*. The M&S line includes fillers in every speed range —equalling the speed of latest cappers and closing machines — without sacrifice of accuracy.

4. *Sanitary by Design*. Available in stainless and non-corrosive type contact materials to meet specific needs. Easily dismantled for cleaning.

This is why M&S has been recognized as the "Standard of the filling industry" for more than 70 years. Your FMC representative will gladly recommend an M&S Filler for *your product*. Won't you call him today?

FOOD MACHINERY AND CHEMICAL CORPORATION

Canning Machinery Division

General Sales Offices:
WESTERN: SAN JOSE, CALIF. • EASTERN: HOOPESTON, ILL.

When inquiring check 7069 opposite last page

Uncases quart bottles, at line speed—from any type container*

Unit speeds removal of quart size returns and can be changed over in 15 minutes to handle bottles of other sizes. Designed for straight-line movement of cases. Capacity is up to 900 bottles per minute. (Full-depth uncaser is available from Industrial Products Div., Radio Corp. of America, Dept. FP, 30 Rockefeller Plaza, New York 20, N. Y. . . . or for more information check 7070 on form which is located opposite last page.)

*First shown at Soft Drink Exposition

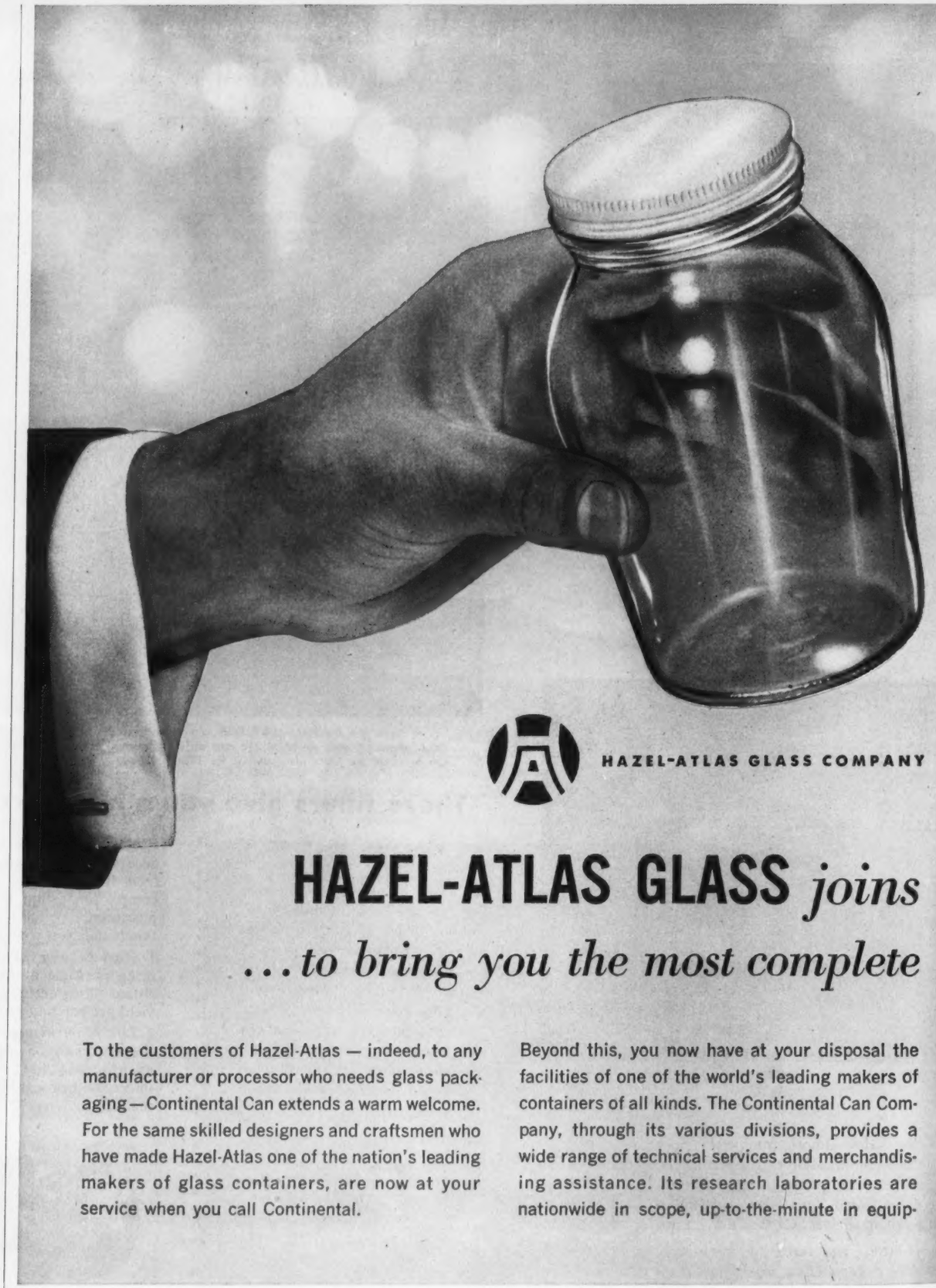
Spout on drum liner aids filling; tied or sealed it guards purity

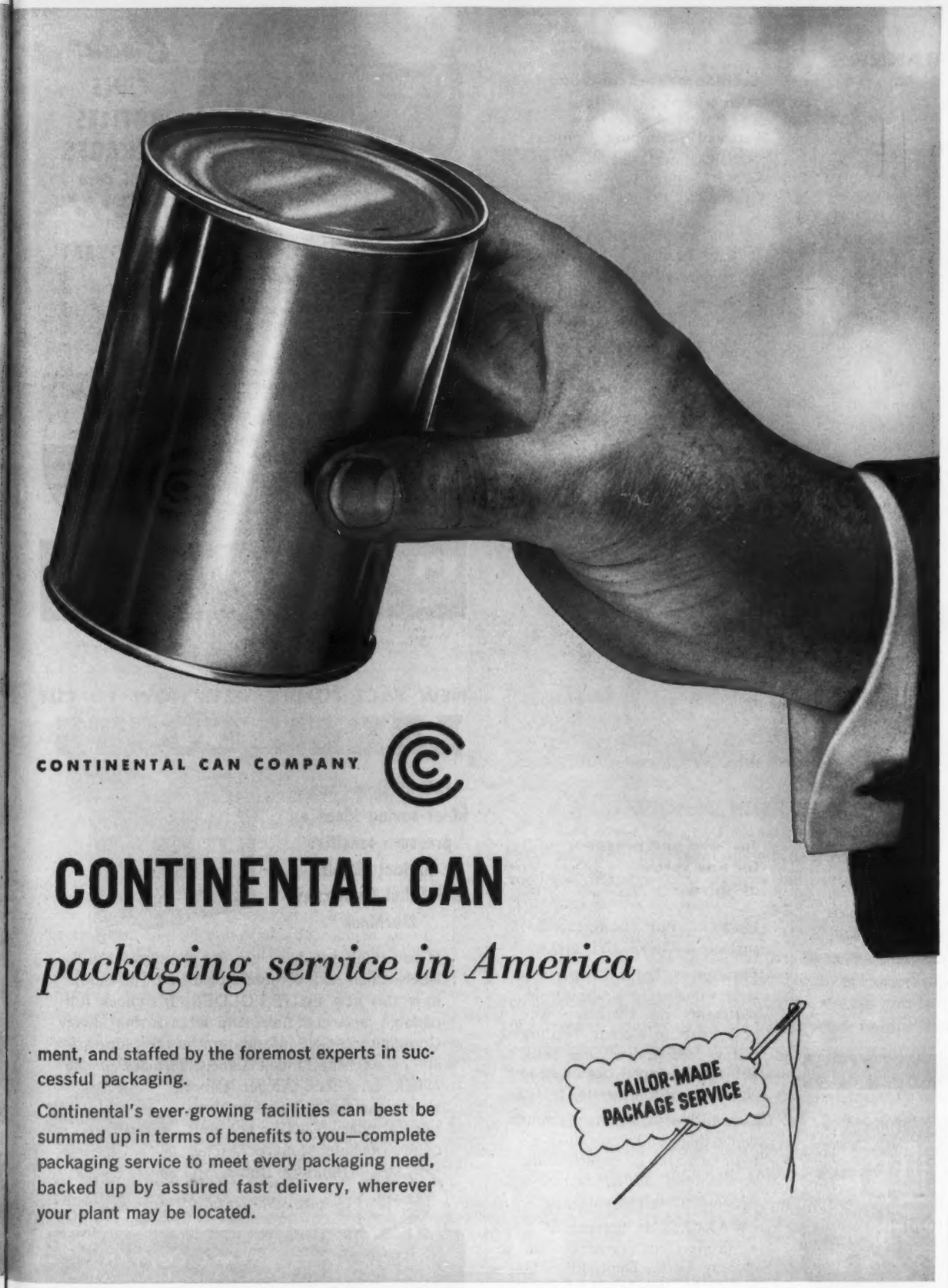
Uses: Protects contents of drums using polyethylene liners.

Features: Spout facilitates filling and can be heat sealed to provide air-tight closure.

Description: Spout is used with drum liners

Air blown through spout inflates liner for easy insertion into drum


HAZEL-ATLAS GLASS COMPANY
HAZEL-ATLAS GLASS joins
...to bring you the most complete
To the customers of Hazel-Atlas — indeed, to any manufacturer or processor who needs glass packaging—Continental Can extends a warm welcome. For the same skilled designers and craftsmen who have made Hazel-Atlas one of the nation's leading makers of glass containers, are now at your service when you call Continental.
Beyond this, you now have at your disposal the facilities of one of the world's leading makers of containers of all kinds. The Continental Can Company, through its various divisions, provides a wide range of technical services and merchandising assistance. Its research laboratories are nationwide in scope, up-to-the-minute in equip-


CONTINENTAL CAN COMPANY
CONTINENTAL CAN
packaging service in America
ment, and staffed by the foremost experts in successful packaging.
Continental's ever-growing facilities can best be summed up in terms of benefits to you—complete packaging service to meet every packaging need, backed up by assured fast delivery, wherever your plant may be located.
TAILOR-MADE PACKAGE SERVICE

When inquiring check 7071 opposite last page

which are cut from extruded tube of polyethylene that is 78″ in circumference. About 48″ of film is cut off to line a drum. A circle of polyethylene film is sealed to one of the open ends of the cut section of tube to provide a round bottom. Before the other end of the liner is double-sealed in a straight line, a smaller polyethylene tube is inserted at one corner and sealed to form a filling spout. Blowing air through spout inflates liner for easy insertion into drum.

With liner in place, spout is connected to discharge nozzle of bag packer. The 8″ spout is tied off with a knot before it is removed. It can be heat sealed, if desired, for an airtight closure.

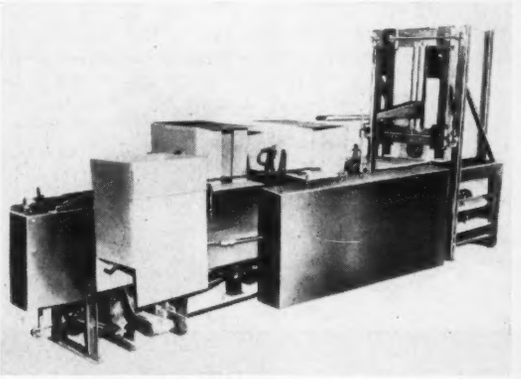
(Filling spout developed in cooperation with Bakelite Corp., Div. of Union Carbide & Carbon Corp., is featured with polyethylene liners fabricated by Protective Lining Corp., Dept. FP, 22 Woodhull St., Brooklyn, N. Y. . . . or for more information reader may simply check 7072 on form which is located opposite last page.)

Opens cases — up to 25 per minute, transfers them to sealer

Does not employ reciprocating action

Uses: For quick preparation of cases in wide range of sizes for packing manually or automatically.

Features: Magazine which holds cases has adjustable escapement to accommodate different thicknesses.



Case opener adjusts to range of sizes

Description: Machine uses suction cups to open cases and place them between adjustable pockets for squaring and folding of lower flaps. Maker can furnish case loader to automatically pack cases and discharge them to a sealer.

(Case opener and positioner is made by A-B-C Packaging Machine Corp., Dept. FP, Tarpon Springs, Fla. . . . or for more information check 7073 on form opposite last page.)

CANNERS AND CAN MAKERS

THE WORLD OVER

ARE SWINGING TO

ANGELUS

CAN CLOSING MACHINES

Through simplified design, ease of operation, ruggedness, and a wide range of accessories designed for quick low cost change over, Angelus Can Closing Machines give you these essentials for more efficient operation—LOWER FIRST COST—LOWER MAINTENANCE—HIGHER PRODUCTION. The complete line of Angelus seamers with their wide range of accessories meet every round can closing requirement for any type of product, liquid or solid, from 30 up to 500 cans per minute. Angelus, with over 45 years of specialized experience, is the nation's only manufacturer exclusively producing automatic round can closing machines.

Write today for complete details. Specify products, can dimensions and your capacity requirements.

ANGELUS

Sanitary Can Machine Company

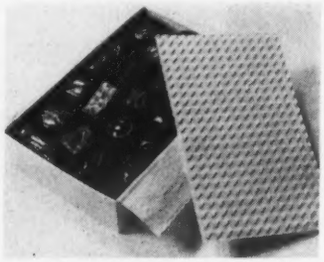
Cable Address "Angelmaco" Western Union Code

When inquiring check 7074 opposite last page

Cushion boxed candies with crimped glassine

Patented crimping process, combining extreme heat and pressure, produces a glassine cushioning material with desirable flexibility plus enough rigidity to absorb shock and prevent breakage in supporting top layers.

It can be made in single sheets or in multiple sheets, depending upon requirements. It is



Crimped sheets absorb shock

available in a wide variety of colors, printed or plain.

(Sparkle Carbion is available from Sherman Paper Products Corp., Dept. FP, Newton, Mass. . . or check 7075 opposite last page.)

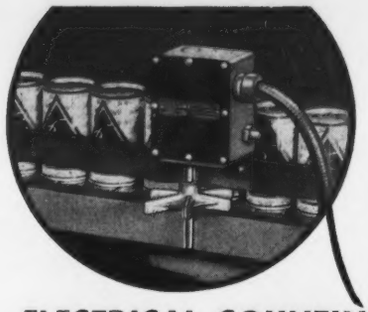
Just aim and press — for fine spray of solvent

Uses: For cleaning metal surfaces of wax and grease.

Features: Solvent is particularly valuable in wrapping departments for removing wax accumulations from sealing plates, feed rollers, and belts. Pressure-packaged for speedy cleaning without waste.

Description: Product is nonflammable and contains no toxic carbon tetrachloride. Available in case lots of twelve 12 oz aerosol-type cans.

(WAXCLEEN "Solvent A" is a product of General Machinery Corp., Dept. FP, P.O. Box 285, Sheboygan, Wis. Check 7076 opp. last page.)



Count CANS BOTTLES PACKAGES with this NEW

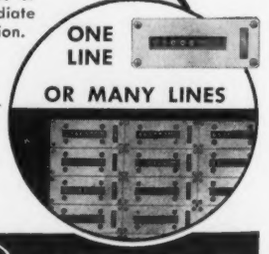
ELECTRICAL COUNTING SYSTEM

Outlasts any previous system

Completely rustproof Contactor unaffected by washdowns, juices, or dirt — no production count tampering.

Counter can be placed in an office or other convenient area for immediate and continuous record of production.

ONE LINE OR MANY LINES



DURANT MFG. CO.

1951 N. Buffum St., Milwaukee 1, Wis.

51 Thurbers Ave., Providence 5, R. I.

Send for Bulletin E-S-5-X

Representatives in PRINCIPAL CITIES

PRODUCTIMETERS

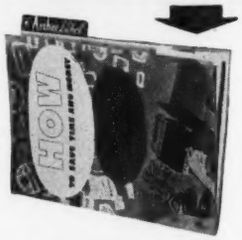
SINCE 1879 Count Everything

When inquiring check 7077 opposite last page

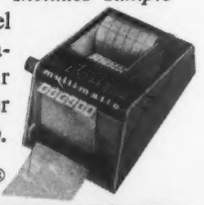
NEW FACT FOLDER TELLS HOW TO CUT

LABEL COSTS

Full of time- and labor-saving ideas on pressure sensitive Contact Labels and Label Dispensing Machines



If you think you have use for pressure sensitive labels which stick without moistening, you should have this new FACT FOLDER. It's chock full of label facts and time- and labor-saving ideas. Contains complete information on the wide variety of Archer Contact Labels. *Includes sample labels.* Describes Archer Label Dispensers which speed application as much as 400%. For your copy write Sales Manager, Archer Building, Room 250.



Archer MULTIMATIC ® Label Dispenser

Archer LABEL COMPANY

783 Kohler St., Los Angeles 21, Calif

Telephone: Michigan 7824 • Offices in Principal Cities

When inquiring check 7078 opposite last page

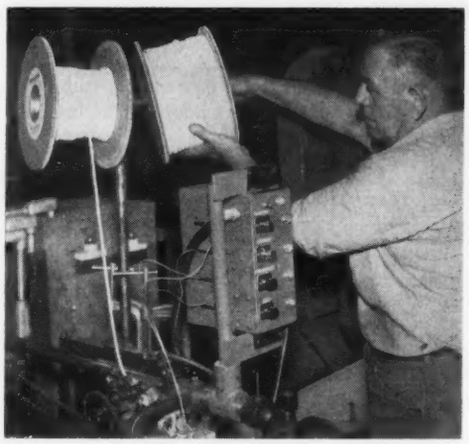
Adhesives in coil form

- Glue pots eliminated
- Adhesive maintains uniformity

Uses: For high-speed bonding of boards, papers, films, foils, and glassine.

Features: Conventional glue pots eliminated. Coil adhesive sets quickly and places no limitation on machine speed. Uniformity is assured as there can be no change in composition by evaporation or settling. Coil adhesive is ready to be used when received, eliminating mixing, weighing.

Description: Application is by special feeding and melting devices that can be attached to various types of packaging machinery. In standard installations the application device is driven from



Flexibility of coil adhesives and applicators permit use on various packaging machines

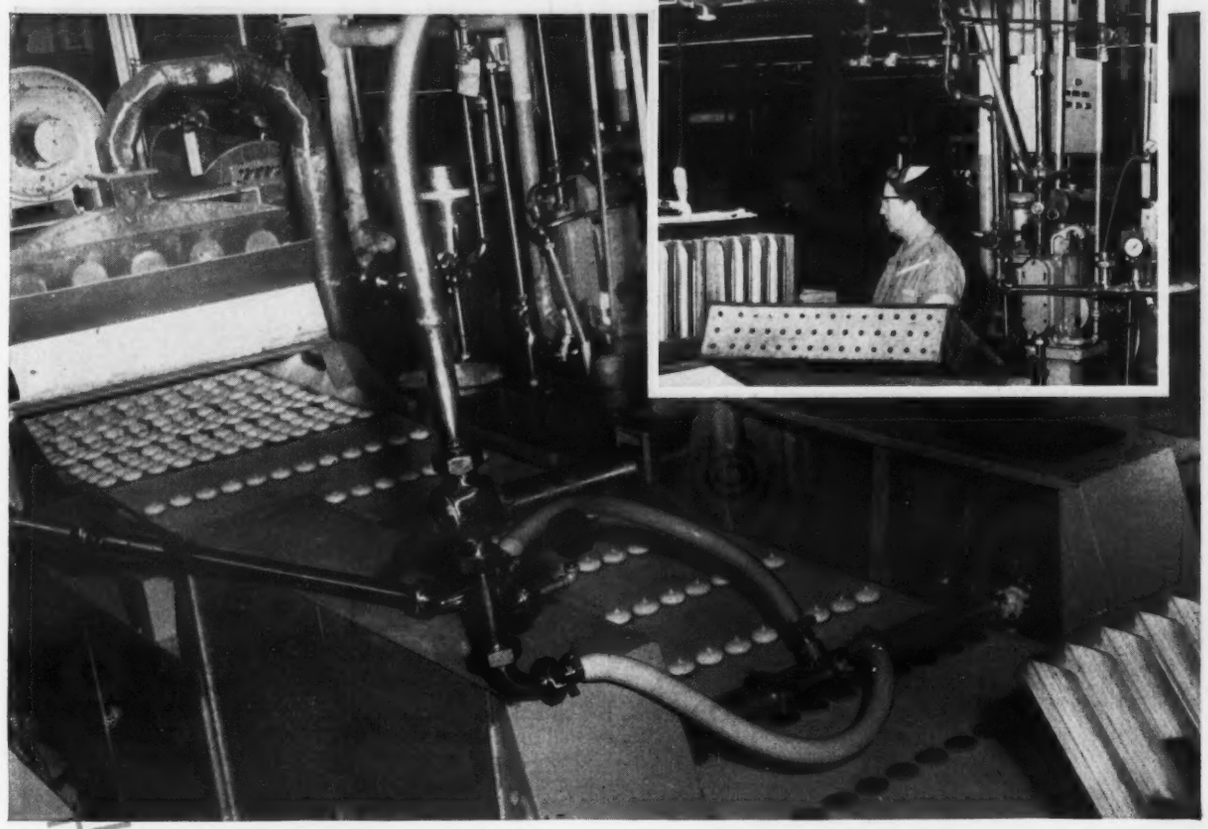
the machine on which it is used, as for example, a converter. Four main components or assemblies are: 1) melting body, cement feed unit, electrical heating and control unit, and a feed chain guard; 2) mounting parts, and adhesive coil support; 3) drive pack; 4) nozzle support post, and cement applying nozzles.

Typical present application, is by a bakery in setting up paperboard trays for brown-and-serve rolls. In this installation, separate applicators are located opposite the four corners of the tray. Each applicator housing receives adhesive from the coil. Housings, which are thermostatically controlled, raise the temperature to level to turn adhesive to liquid. Transfer wheels then apply adhesive to side walls. Next, side walls and end walls are formed in carton forming machine. Flaps are then sealed to outside of the side wall.

(Thermogrip adhesive coils and applicator kits are available from United Shoe Machinery Corp., Industrial Sales Div., Dept. FP, 140 Federal St., Boston, Mass. Check 7079 opposite last page.)

TRI-CLOVER FITTINGS Protect Product Quality

in the WORLD'S LARGEST BAKERY



NABISCO

NATIONAL BISCUIT COMPANY'S New Chicago Bakery is the largest biscuit and cracker bakery in the world. This modern, efficient plant utilizes rigid laboratory controls and elaborate sanitary measures to guarantee products of the highest quality.

Helping NABISCO to achieve these outstanding results are scores of Tri-Clover Division's sparkling clean stainless steel sanitary fittings, valves and tubing, used in numerous cookie and cracker baking and processing operations. For here, as elsewhere throughout the food processing industries, users have found that there is no substitute for the high quality and complete sanitation inherent in Tri-Clover products.

Let our engineering staff help you achieve new standards of efficiency and sanitation.

Call or write for further information.

• *Top view shows a few of the Tri-Clover valves and other fittings used in handling various cookie fillings and coatings.*

• *The large view shows a close-up of part of the Tri-Clover sanitary valves and fittings used to feed marshmallow topping used on Nabisco's well known "Fancy Crest" cookies.*

LADISH CO.
Tri-Clover Division
Kenosha Wisconsin

See your nearest TRI-CLOVER Distributor

TRI-CLOVER

Export Dept.
8 So. Michigan Ave,
Chicago 3, U.S.A.

5956

When inquiring check 7080 opposite last page

The Mor-Can-Pak machine Packs up to 750
CANS PER MINUTE!
Morris' engineers have developed this remarkable new MOR-CAN-PAK machine for high speed packaging operations required by today's highly competitive conditions. The machine is a model of simplicity and ease of operation. Requires only 15 minutes for changeover from one can size to another. Can be quickly set for various speeds up to 750 cans per minute. Now in use in several leading breweries. To be used in connection with the new Morris MOR-CAN-PAK Carrier that wraps around canned products. Let our representative call on you with complete MOR-CAN-PAK case histories and operating costs.
SPECIFICATIONS
Power Supply: 220 or 440 volt, 60 cycle, 3 phase
Main Drive: 1 HP Reeves variable-speed drive, fully enclosed motor
Can Intake: ¼ HP Reeves variable-speed drive, fully enclosed motor
Floor Space Required: Machine length 20'6" (with standard 12 ft. compression section), machine width 4'0"
NOTE: Present standard machine will take a carton up to 9" in feed length. Can arrangements can be 2 x 2, 2 x 3. Machine can be supplied to handle 2 x 4, 2 x 5 or 2 x 6 packs. Machine has been tested at speeds up to 125 cartons per minute.
Carrier may be printed letterpress, Flexographic or rotogravure.
"Ask the company that operates a MOR-CAN-PAK Machine"
MORRIS CAN CARRIERS
MORRIS PAPER MILLS • A Division of Federal Paper Board Company, Inc.
7 South Dearborn Street • Chicago 3, Illinois

When inquiring check 7081 opposite last page

packaging

High-speed unit fastens 'chubs' in casings at rates up to 2500 per hr

No special experience is needed to operate fastening unit

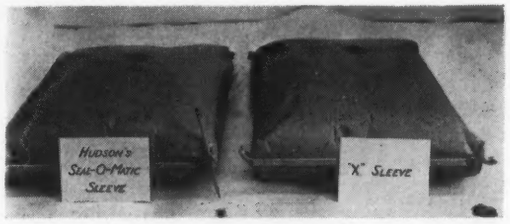
Meats, cheese products, and others, which have recently become popular in "chub" form, packaged in transparent films, can be easily sealed with high-speed unit. Semi-automatic machine sorts U-shaped metal fasteners out of hopper, feeds them to closing head. Operator then pre-ties casings at this head. After filling, additional machines can then be used for second tie. Hermetic seals are guaranteed, and speeds of 1500 to 2500 packages per hour can be obtained, depending on product and film.

(Vac-Tie Fastening machines are produced by Vac-Tie Fasteners, Inc., Dept. FP, 1140 East Jersey St., Elizabeth, N.J. . . . or for more information check 7082 on form opposite last page.)

Losses in filling multiwall bags reduced to a minimum

Self-sealing, no-tuck-in closure prevents sifting that adds up to costly waste

Line of multiwall bags features a special valve closure designed to eliminate sifting. It is described as especially effective in loading granular

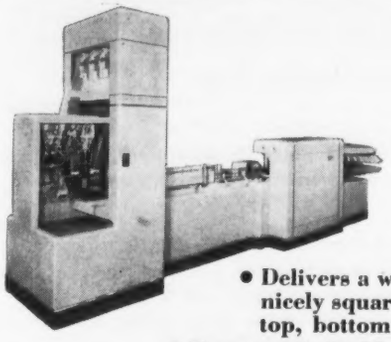


Difference in sifting loss during filling effected by special valve closure

or pellet type products. Development is result of two years of research, experimentation, and field testing.

(Bags with Seal-O-Matic sleeve are available from Hudson Pulp & Paper Corp., Dept. FP, 477 Madison Ave., New York 22, N. Y. . . . or check 7083 on form opposite last page.)

Cut Costs with SEALTITE



- Delivers a well settled, nicely squared bag at top, bottom and sides
- Pre-scored, double fold, uniformly glued seal keeps product in and dirt out
- Uses any standard make of gusseted bag — no royalties
- Seal readily opened, yet tamper-proof
- Seals 30 to 50 bags per minute
- Users report costs reduced up to $500.00 per month per machine

Write for complete information

CONSOLIDATED PACKAGING MACHINERY CORP.
BUFFALO 13, N.Y.

When inquiring check 7084 opposite last page

A BETTER CLOSURE for SMALL PAPER BAGS

UNION SPECIAL'S Style 60000 D bag closing machine, producing the exclusive Dubl-Tape closure, is designed to speed packaging . . . cut costs . . . and improve appearance.

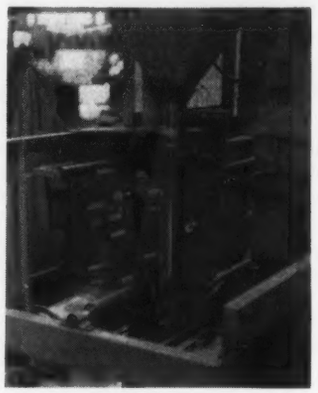
- FAST—Speed to match output of standard filling and weighing equipment.
- NEAT—Produces an eye-pleasing, sales-stimulating package with high merchandising value.
- ECONOMICAL—Operating cost per bag is at a minimum . . . uses inexpensive cotton thread and paper tape.
- VERSATILE—Adjustable for a wide range of bag sizes, short or long runs.

Write for BULLETIN No. 100 to get the complete facts on this machine . . . and how it can do a better closing job for you.

Union Special MACHINE COMPANY
432 N. Franklin Street • Chicago 10, Illinois

When inquiring check 7085 opposite last page

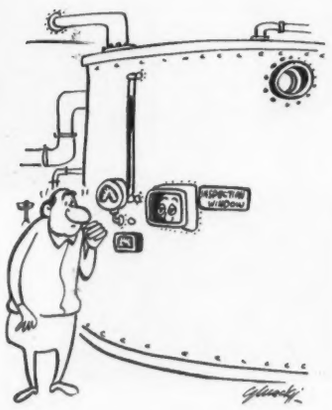
Registration mark assures uniformity of bag size*

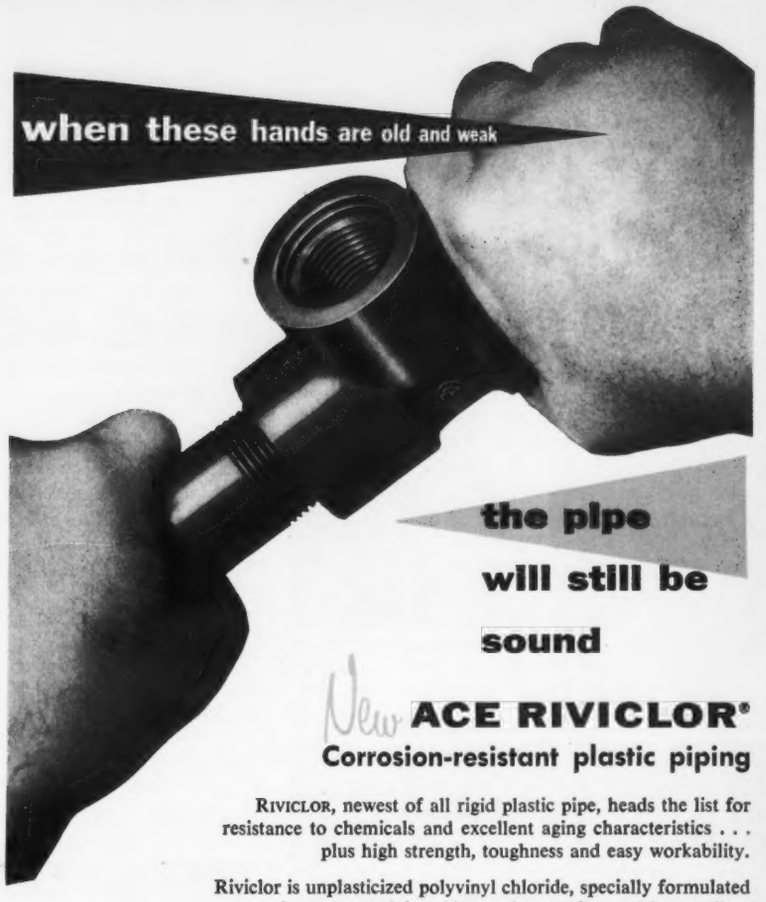


All well-known transparent films can now be handled on improved packaging machine. Addition of registration mark provides uniform bag size. Machine forms bag from flat stock, fills it, seals it, and cuts it off roll. Produces oval-shaped bag, conforming closely to shape of product being packaged.

(Improved Verti-Pak is built by Mercury Heat Sealing Equipment Co., Dept. FP, 2601 N. Howard St., Philadelphia 33, Pa. . . . or for more information check 7086 on form opposite last page.)

*First shown at recent Package Machinery Exposition.





New **ACE RIVICLOR®**
Corrosion-resistant plastic piping

RIVICLOR, newest of all rigid plastic pipe, heads the list for resistance to chemicals and excellent aging characteristics . . . plus high strength, toughness and easy workability.

Riviclor is unplasticized polyvinyl chloride, specially formulated for process piping. Non-toxic, non-flammable, excellent insulating properties. Only half weight of aluminum. Never needs painting. Smooth inner surfaces give you high flow rates with low loss of head.

Approved For Use With Drinking Water

Use Riviclor for all in-plant piping of mild or strong corrosives at normal temperatures . . . for liquid lines where "sweating" or corrosive vapors are problems . . . for underground piping. Pipe, fittings, diaphragm valves from ½" to 2".

Ask for Technical Bulletin CE-56.

ABBREVIATED TABLE OF CHEMICAL RESISTANCE

ACIDS		BASES		MISCELLANEOUS			
Acetic 50%	S	Ammonium Hydroxide 28%	S	Ethyl Alcohol	S	Carbon Tetrachloride	S
Chromic 25%	S	Sodium Hydroxide 50%	S	Methyl Ethyl Ketone	U	Plating Solutions	S
Hydrochloric 38%	S	HALOGENS		Gasoline	S	Photographic Solutions	S
Hydrofluoric 50%	L	Sodium Chloride Sat.	S	Mineral Oil	S	KEY: S—Satisfactory	
Nitric 20%	S	Ferric Chloride	S	Animal Oil	S	L—Limited to certain applications	
Sulphuric 50%	S	Sodium Hypochlorite 5%	S	Vegetable Oil	S	U—Unsuitable	
Sulphuric 98%	S			Phenol 10%	S		
				Chlorine 5%	L		
				Alum	S		

ACE processing equipment of rubber and plastics
AMERICAN HARD RUBBER COMPANY
93 WORTH STREET • NEW YORK 13, N. Y.

When inquiring check 7087 opposite last page

Outstanding Service

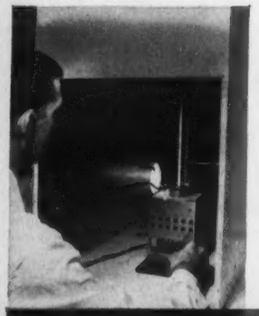
Another reason to choose TENOX antioxidants

As the leading manufacturer of food-grade antioxidants, Eastman has accumulated the data and experience needed to solve most problems involving rancidity and oxidative deterioration. Which antioxidant to use—how much to use—and how to use it—are problems which we at Eastman are particularly well-equipped to answer.

We have no axe to grind about any antioxidant—we produce the widest range and sell them all. Our best and unbiased advice is available to you at any time. These photographs convey some idea of the scope and range of the tests and services at your disposal. If you would like to explore the possibility of using Tenox antioxidants in your product, write to Eastman Chemical Products, Inc., Kingsport, Tennessee—a subsidiary of Eastman Kodak Company.

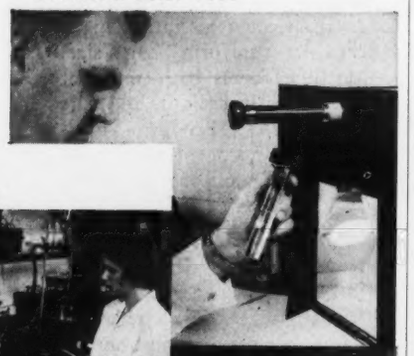
Spectrophotometric Analysis

Smoke Test

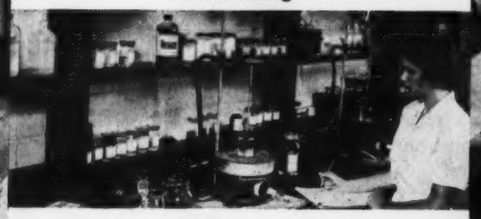


Gardner Color Test

Lovibond Color Test



Formulating



Oxygen Bomb Test

Schaal Oven Test

Taste Test

AOM Test

Tenox Eastman food-grade antioxidants

SALES OFFICES: **Eastman Chemical Products, Inc.,** Kingsport, Tennessee; New York City; Framingham, Mass.; Cincinnati; Cleveland; Chicago; St. Louis; Houston. **West Coast: Wilson Meyer Co.,** San Francisco; Los Angeles; Portland; Salt Lake City; Seattle; Denver; Spokane; Phoenix.
Canada: P. N. Soden Co., Ltd., Montreal, P.Q.; Toronto, Ontario.

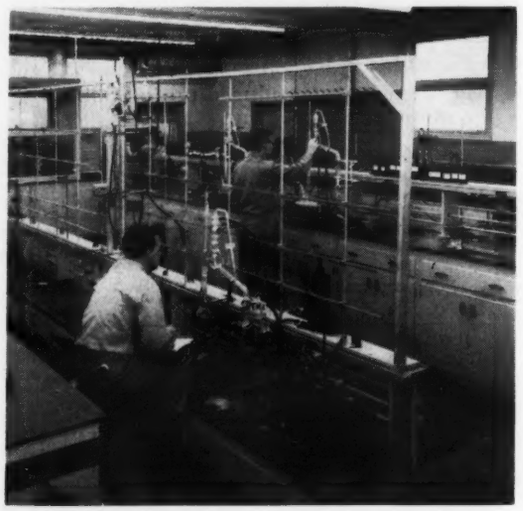
When inquiring check 7088 opposite last page

food ingredients

Sucrose esters available soon in pilot plant quantities

New surfactants potential detergents, emulsifiers, bread softeners, anti-caking agents

Pilot plant production of sucrose esters is expected to begin early this year, under licensing agreement between Berkeley Chemical Corp. and Sugar Research Foundation. Basic research on these surfactants was done by Foster D. Snell, Inc. Their many potential applications in food and other industries have aroused much interest in recent months.



Research lab at Berkeley Chemical, where scale-up work to pilot plant production was performed

These esters consist basically of a sucrose molecule linked with a fatty acid group. They are nonionic and very soluble, and are solid in form. They are odorless, tasteless, non-toxic, and non-irritating.

Foremost potential is as detergents — the esters are more compatible with inorganic salts (minimizing the problem of hard waters), and can be combined with soaps and germicidal surfactants. They cost

NUTRITIVE SUPPLEMENT NEWCOMER

A new economical source of supply makes Torula yeast a potentially good buy for those interested in upgrading protein and vitamin contents of their products. Details can be found beginning on page 22.

much less than present detergents.

When used to wash fruits and vegetables prior to processing, the sugar detergents present no problem of carryover taste or corrosion of equipment, as is the case with many other detergents. Equipment can also be washed with it without detrimental effect of residues.

The sucrose esters have many additional properties of value particularly to food processors:

1) As emulsifying agents, they are reported to be superior to many existing agents and, because of their low cost, should find their way into many products, such as shortening, salad oils, ice cream, peanut butter, cocoa butter, and many others.

2) Carrying emulsification a step further, the sugar esters should aid in the problem of incomplete fat-digestion encountered by premature infants and aged persons — which often results in too-low calcium levels.

Addition of the esters should materially aid in this digestion, as indicated in preliminary experimentation.

3) Dehydrated food products, such as instant coffee, cocoa powder, dry milk solids, powdered eggs, will disperse in water much more readily when a sugar ester is included in the product.

4) The esters also have potential as anti-staling agents for bread and cake, and as anti-splattering agents for margarine. Tests have shown them to be better anti-caking agents for confectioner's sugar than existing agents.

(Producer of the esters is Berkeley Chemical Corp. of Berkeley Heights, N.J. Sales agent for the company is Millmaster Chemical Corp., Dept. FP, 295 Madison Ave., New York 17, N.Y. Check 7089 opp. last pg.)

For more information on product at right, specify 7090 . . . see information request blank opposite last page.

Using Salt Efficiently

by **INTERNATIONAL SALT COMPANY, INC.**—America's largest producer of salt

How to Find the Strength of Salt Brines—Accurately

In most of today's plants, the type of hydrometer called a Salometer can generally be used to measure the strength of salt brines most accurately. This device (similar in principle to the hydrometer which checks the condition of your car's battery) is convenient to use—and its scale permits fast calculations for a variety of plant needs. The Salometer scale reads from 0° in pure water to 100° in saturated brine, with each degree representing a percentage of fully saturated brine.

Using the Salometer with maximum accuracy, however, isn't just a matter of reading the scale. A number of simple precautions must also be taken to make sure the Salometer records correct brine strength. Here they are:

1. Check the temperature of the brine. Since most Salometers are calibrated for reading at 60° F., brine temperature should be kept at this level during testing. When other brine temperatures are encountered, it is necessary to use the following table of simple correction factors. These will help provide a completely accurate measurement of brine strength.

APPROXIMATE CORRECTION IN SALOMETER DEGREES

Observed Salometer reading	Subtract per degree below 60° F.	Add per degree above 60° F.
0 to 10	0.049	0.060
11 to 20	0.064	0.082
21 to 30	0.077	0.094
31 to 40	0.087	0.103
41 to 50	0.095	0.112
51 to 60	0.102	0.118
61 to 70	0.107	0.123
71 to 80	0.112	0.128
81 to 90	0.116	0.131
91 to 100	0.120	0.134

For measuring cold brines, such as those used in meat-packing plants, special 38° F. Salometers may be used. Special temperature-correction factors are available when using this type of Salometer to test brines above or below 38° F.

2. Brine should be tested only in a straight-walled cylinder made of clear glass—set on a level surface. Any moisture that collects on the outside of the cylinder should be wiped off before testing procedures start.

3. Salometer stem must be thoroughly dry, clean, and free from grease or caked salt crystals. Also, the Salometer should not touch the sides of the cylinder when readings are taken. It should be read with the stem in a vertical position.

4. Check new Salometers by placing them first in clear water; reading should be 0° S. Then empty the cylinder, rinse with a saturated salt solution, and refill with fully saturated brine; reading should be 100° S. Both water and brine should be at 60° F.

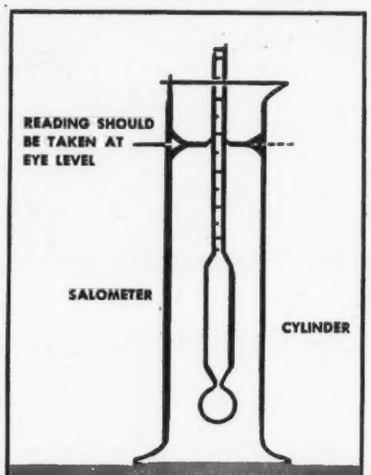


Illustration showing the proper eye level for reading a free-floating Salometer in a straight-walled glass cylinder.

5. Correct reading technique. Brine tends to rise along the sides of a glass cylinder, forming a concave surface known as a meniscus. For correct reading, the eye should be brought to a point level with the *bottom* of this meniscus. Errors of two or three degrees are possible if reading is taken at the point where the brine has risen along the sides of the cylinder.

Special Salometers. In the canning industry, where brine is used for quality grading, a different type of Salometer is often used. It's graduated on a scale where 100° S. represents brine containing 25% salt, instead of the normal 26.395%. Special hydrometers may also be used in the tanning or chemical industries. But the same procedures outlined here must always be followed when brine is to be tested—no matter what type of hydrometer a plant uses.

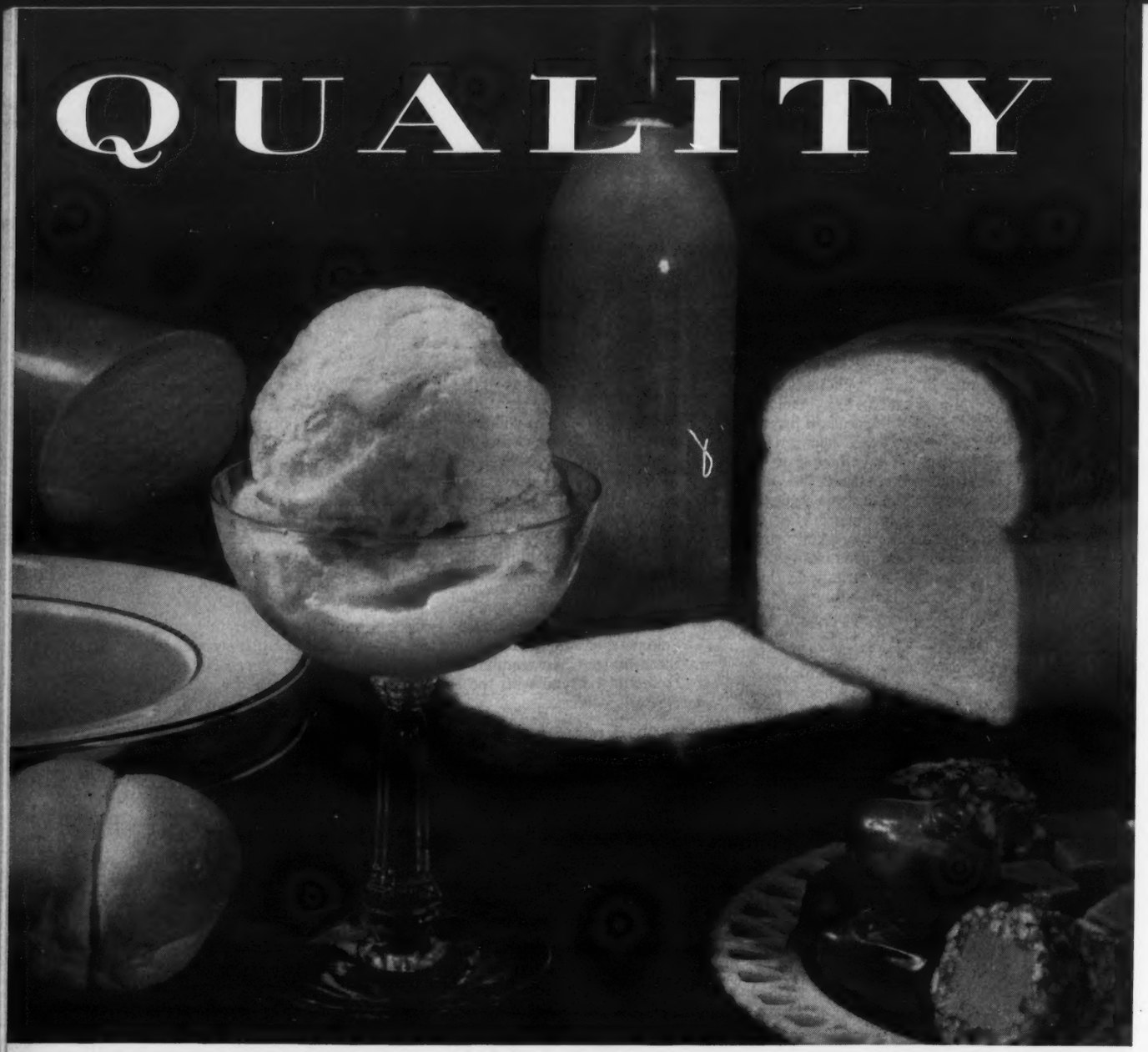
TECHNICAL SERVICE WITH YOUR SALT

Through skilled and experienced "Salt Specialists," International can help you get greater efficiency and economy from the salt or brine you use. International produces both Sterling Evaporated and Sterling Rock Salt in all types and sizes. And we also make automatic dissolvers in metal or plastic for both kinds of salt. So we can recommend the type and size of salt most perfectly suited to your needs.

If you'd like help on any problem concerning salt or brine—or further information on testing brine strength—contact your nearest International sales office.

International Salt Co., Scranton, Pa.
Sales Offices: Atlanta, Ga.; Chicago, Ill.; New Orleans, La.; Baltimore, Md.; Boston, Mass.; Detroit, Mich.; St. Louis, Mo.; Newark, N. J.; Buffalo, N. Y.; New York, N. Y.; Cincinnati, Ohio; Cleveland, Ohio; Philadelphia, Pa.; Pittsburgh, Pa.; Richmond, Va.

FOR INDUSTRY, FARM, AND THE HOME—
STERLING SALT
PRODUCT OF INTERNATIONAL SALT CO., INC.



The superior dairy ingredient that improves quality and reduces cost

Spray-process Sweet Dairy Whey gives you 50% more milk sugar, 50% more milk protein, and more milk minerals too. Add them all up and you've got more mouth-watering taste, more eye-catching color and a more uniform consistency in all of your products. Best of all...you can easily save up to 40% on dairy ingredient costs.

Western's Sweet Dairy Whey is completely quality controlled from laboratory to production. It meets or exceeds U. S. Extra Grade standards in every respect. Try this pure dairy ingredient today and see how it can improve *your* profit picture.

For complete information and a working sample, please write our Technical Service Department 119.

Here are a few of the products improved by Sweet Dairy Whey:

- Bakery Goods
- Candy
- Soft Drinks
- Creamed Foods
- Soups
- Prepared Mixes
- Frozen Desserts
- Meats

Coast-to-coast manufacturing and warehousing facilities...no seasonal shortage or shipping delays.

Valley Fresh FOREMOST Sweet Dairy Whey

WESTERN CONDENSING COMPANY, Appleton, Wisconsin • World's Largest Producer of Whey Products

Torula Yeast

(*Continued from page 23*)

wood components. The spent sulfite liquor, as it passes from the digestion, contains about 2% of these wood sugars.

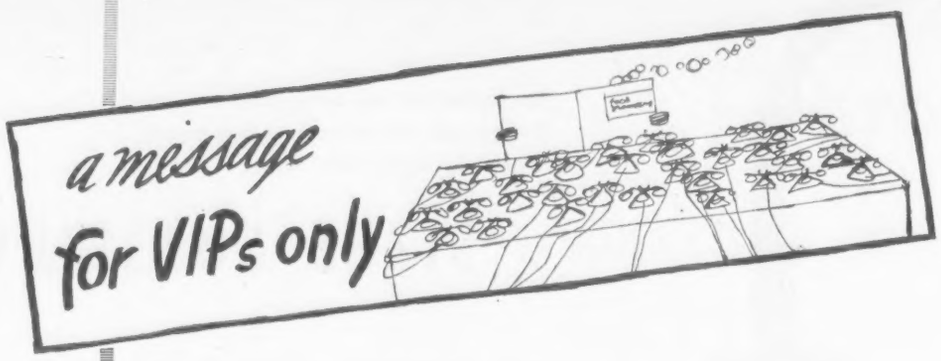
In the Charmin yeast plant, this sulfite liquor is first stripped of SO_2, then added to one of two 60,000 gal fermentor tanks. A pure culture of the yeast is added to this tank also. After three hours retention in carefully-controlled continuous fermentor, solution is automatically withdrawn to purification operations. Product passes through mechanical defoamer, then to primary separator where yeast is separated from mother liquor. Three-stage washing and separating operation follows. Yeast is then dried on steam-heated double-drum dryers, milled to a powder, and bagged.

Instrument-controlled

All operations in this process are automatically controlled by instruments, located centrally on single panel to simplify supervision. Panel is graphic type — has flow diagram mounted on it. Instruments are located at corresponding process points, making quick identification of proper instruments easy.

Conditions in the huge fermentors are, of course, critical, with temperature and pH being the most important. Charmin is able to maintain pH at desired level ± 0.1 by automatically-controlled addition of aqua ammonia. Temperature is controlled to within a fraction of a degree by continuously circulating contents of fermentor through cooler — flow of coolant is controlled by automatic instrument, governed by temperature sensing element within tank. Cooling is supplied by 1000 ton refrigeration system.

For more information on product at left, specify 7091 . . . see information request blank opposite last page.



More of you Very Important Persons concerned with production and processing read and use FOOD PROCESSING than any other magazine in the food industry.

This claim is based on an audit of *known* readership . . . that is, on an actual count of readers who, in search of more information, used the Reader Service Slip — that handy, convenient form opposite the last page.

Consider the facts as tabulated below . . . that 7274 product requests were made by 2289 different industrial processing people last January, February, and March, using this handy form . . . many more than compiled by any other magazine in the field . . . more than half of these people coming from firms having a capital rating of over $1,000,000.

Titles	*Percentage of Individuals*
Companies: Owners, Partners, Presidents, Vice Presidents, and other corporate officers and executives	19.6
Works Executives: Superintendents, Plant Managers, and Assistants	30.2
Supervisors, Dept. Heads, Foremen, and Assistants	7.7
Technical Directors, Directors of Research, Chief Chemists, Chemists, Food Technologists, and Assistants	22.5
Engineers: Chief, Plant, Chemical, Process, Production, and Assistants	18.0
TOTAL REQUESTS FROM INDUSTRIAL-PROCESSING PEOPLE	**100.0**

In addition to the above requests, the following number were also made, by non-processing people: independent consultants and testing laboratories, 92; government: federal, state, municipal, military, naval, etc., 23; miscellaneous: librarians, etc., 90; titles not given, 82—bringing the grand total of requests to 2576.

By serving more of you key folks so that you actually profit by reading, FOOD PROCESSING has become your industry's favorite magazine. We appreciate your comments . . . we welcome your suggestions to serve you better.

THE EDITORS

POWDEX
HY-TEMP IMITATION
VANILLA

Imparts Truest Vanilla Taste Ever

FIDELITY★ POWDEX Hy-Temp Vanilla Powder is produced from resivan, an exclusive basic material developed in our laboratories, which imparts the smoothest, pure vanilla-like flavor ever offered to food processors.

STABILITY★ POWDEX Hy-Temp is stabilized to resist high temperatures and will not break down or sublime when subjected to high-temperature, quick-baking processes.

STRENGTH★ POWDEX Hy-Temp is approximately the same strength as vanillin, but possesses the other fine delicate components so necessary to simulate pure vanilla.

ECONOMY★ POWDEX Hy-Temp Vanilla is economical and is recommended for all dry mix foods, i.e., puddings, baked goods, biscuits and crackers, ice cream cones, chocolate and all other foods requiring a *good* vanilla flavor.

Also available in liquid solution of varied strengths. Write for samples and information today.

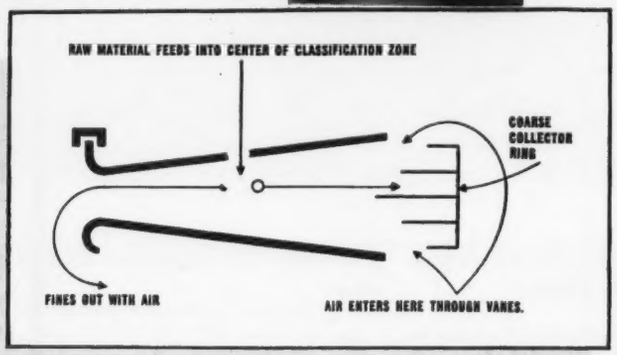
FLAVOREX CO., INC.
302 South Central Ave. ★ Baltimore 2, Md.

When inquiring check 7092 opposite last page

Fine powders can now be separated into ultra-sharp particle size fractions, as high-capacity classifier, on a production basis,

SIZES SUB-SIEVE

- **Eliminates fines or coarse particles or both,**
- **Purifies or separates into components, when components have different particle sizes**


RAW MATERIAL FEEDS INTO CENTER OF CLASSIFICATION ZONE
COARSE COLLECTOR RING
FINES OUT WITH AIR
AIR ENTERS HERE THROUGH VANES.

Air vortex principle is basis for classification in the super classifier. Air enters a centrifugal chamber from outside periphery and follows a spiral or vortex path until it is discharged through an opening nearer center of the chamber. Powder particle will be subject to centrifugal force tending to move it to the chamber wall, this force being opposed by a drag force induced by radial inflow component of the air stream.

If particle is large enough, centrifugal force will move it outward, if it is small enough, drag force will move it toward the center. When both forces are equal, particle describes a circular path. This equilibrium condition determines the cutpoint of an ideal classifier. All particles larger than equilibrium size will move to the outside, and all particles smaller will move to the inside. By directing particles into a suitable collecting system a powder is readily divided into coarse and fine fractions at a predetermined cutpoint.

High efficiency in separating dry fine powders into fractions of different particle sizes is afforded by new unit which employs "optimum air vortex" principle in its operation. Classification of fine powders is a relative newcomer to processing operations, and has application in the food field to flours and many other products. In using the unit, high product recoveries are obtained, the exact percentages varying with the density of the product, cutpoint desired, and other characteristics. (Product recovery for fines, for instance, is the percentage of available fines in the feed which emerge in the fines fraction. The remainder of these fines emerge in the coarse fraction.) Test runs with talc have produced recoveries of over 97% at a cutpoint of 15 microns.

Particle separation can be handled efficiently in the size range of approximately 10 to 125 microns,

Compact 5 ton/hr high efficiency classifier occupies about same space as office desk

E POWDERS

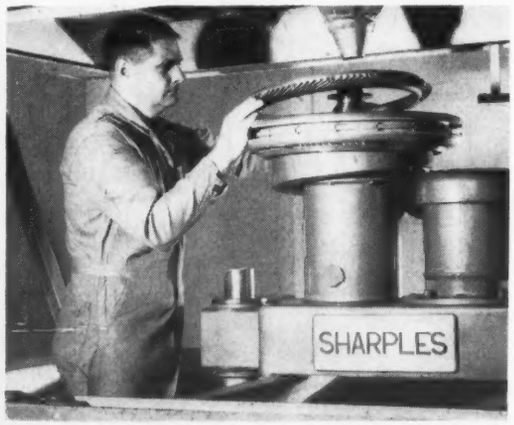
depending upon product's specific gravity. In dense materials, particles smaller than 10 microns can be classified.

Classifier is available in four sizes with capacities ranging from approximately 1000 to 30,000 lb/hr. The four models are designated by the diameter of the classification zone: The K-16 is 16 inches in diameter, the K-20 is 20 inches in diameter, etc. There are no differences between the four models in efficiency because the classifier is constructed to a basic optimum design for an air vortex classifier.

In a typical production run the powder is fed continuously into the classifier from a vibratory feeder. After classification the fines fraction is carried by the exhaustor air stream to a collector, and the coarse fraction goes out through the air lock of the classifier, from which it is either returned to the mill for re-grinding or is collected as product.

Every particle is preconditioned, ready for classification, by being brought up to the tangential speed of the air before being fed into the classification zone. Constant cutpoint is maintained by keeping the relationship between centrifugal and drag forces constant. This is achieved by means of converging specially-shaped plates which increase air velocity as the air progresses from the

(*Continued on next page*)



To change fraction top size, air vanes are changed, as seen here. Simple operation takes 20 min

Mikro-D

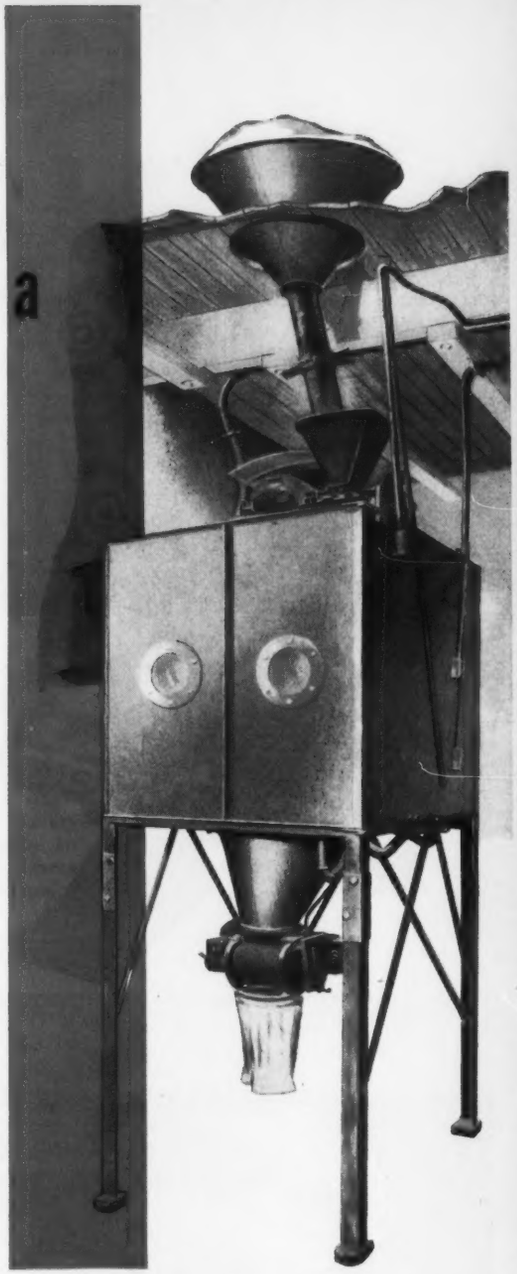
important "ingredient" in a quality chocolate product...

Mikro-D Installation at A. N. Stollwerck grinds and collects sugar in efficient, economical, straight-line operation!

Specialists in chocolate products for more than 80 years, A. N. Stollwerck, Inc. serves leading candy makers, ice cream companies, and bakeries across the country. Quality is important to Stollwerck, and economy as well . . . two factors that led to selection of MIKRO-D equipment for their sugar grinding process.

While the arrangement of the units shown here offers a fine example of the flexibility of MIKRO-D equipment, production figures tell an even more pertinent story—utilizing only a 15 h.p. motor, the MIKRO-D installation continuously produces 2000 lbs. of freshly-ground sugar per hour, with a fineness of 90-95% through 200 mesh!

MIKRO-D equipment—individually engineered to do a specific job—can put similar efficiency and economy into your pulverizing and collecting operation. Arrange to send us a sample of the unground product. We'll be glad to make test runs to your specifications . . . and submit laboratory findings and recommendations, entirely without obligation.



MIKRO-D units at Camden, N. J. plant of A. N. Stollwerck, Inc., consist of a #2 MIKRO-Pulverizer mounted directly on top of a 24-1-36 MIKRO-COLLECTOR, with 8" MIKRO AIRLOCK. Unground sugar is easily poured into a hopper from floor above, to be carried through the pulverizing and collecting process.

Mikro-D PULVERIZING MACHINERY DIVISION
METALS DISINTEGRATING COMPANY INC.
10 Chatham Road Summit, New Jersey

Genuine Mikro-D Replacement Parts available from large stock within 48 hours.

MANUFACTURERS OF PULVERIZING AND GRINDING AND DUST COLLECTION EQUIPMENT

When inquiring check 7093 opposite last page

Sizes Sub-sieve Powders

(*Continued from preceding page*)

outside to the inside. This sharp cutpoint is maintained at high capacity regardless of feed rate or size distribution in the feed. For example, fine fractions with a maximum particle size in the range of 15-20 microns will contain less than 0.01-0.04% residue on a 325 mesh screen.

The classifier is quite compact and small in relation to its high capacity — a unit with a nominal product rating of 10,000 lb/hr occupies no more space than an office desk. Instrumentation consists of two measurements, air flow rate and pressure differential across the system. The classifier is adjusted for change in materials and change in cutpoint by replacing the air vane to create a new air vortex path, changing the rotor speed and the air volume through the classifier.

Unit is self-cleaning; blower suction removes practically all remaining particles during the slowdown to a stop. Basic design is such that all surfaces are essentially streamlined. Places where high velocity exists between powder and contacting walls, such as powder feed tubes, are provided with replaceable inserts of hardened materials for economical maintenance. A high-strength, completely-sealed spindle eliminates possibility of particles entering the assembly.

(Super Classifier is manufactured by the Sharples Corp., Dept. FP, 2300 Westmoreland St., Philadelphia 46, Pa. . . . or for more information check 7095 on form opposite last page.)

MOYNO® PUMPS
CUT HANDLING COSTS
at P. J. Ritter Company

. . . pumping tomato seeds and 5-15% water

The Moyno "progressive cavity" pumping principle has enabled thousands of plants to pipe difficult materials that were transported by hand and other expensive means. For example, The P. J. Ritter Co., famous food packers since 1854, have increased efficiency by installing seventeen Moyno Pumps. The one shown at the left is pumping tomato seeds in 5-15% solution at 10 gallons per minute. The pump runs at 600 RPM.

Moyno is the only pump that will handle many difficult materials such as abrasives, pastes, slurries, chemicals, foods, suspended solids, etc., without foaming, aerating, crushing or excessive pump wear.

Examine your processing methods. No doubt there are several places where Moyno Pumps can drastically cut costs. Ask us, we'll give you a prompt answer. Send us an outline of your problem today! Write for Bulletin 30-FP.

R&M

ROBBINS & MYERS, INC.

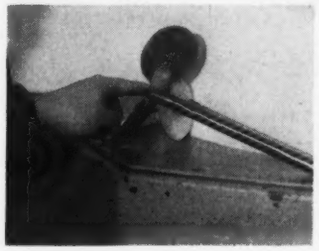
SPRINGFIELD, OHIO — BRANTFORD, ONTARIO

Motors · Fans · Hoists · Moyno® Pumps · Propellair® (Industrial) Fans

When inquiring check 7094 opposite last page

"Perhaps, sir, our economy model will suit your specific needs."

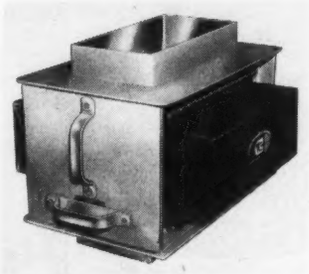
Agitator blade cannot drop off of shaft*



New method of fusing metal joins agitator blade and shaft securely. Blade will not drop off during mixing of ingredients. When joined, only outer edge of shaft is attached to blade—shaft and blade being fused into one piece. ("Micro-brazed" agitators are made by Metal Glass Products Co., Dept. FP, Belding, Mich. Check 7096 opposite last page.)

*First shown at Soft Drink Exposition

Magnetic filter removes ferrous contamination



Unit will handle materials of 200- to 300-mesh

Uses: To separate micron-size ferrous fines from high-density dry and liquid materials, such as granular foodstuffs, pharmaceuticals.

Features: Permanent magnet filter can remove minute ferrous contamination, to im-

(Continued on next page)

For more information on product at right, specify 7097 . . . see information request blank opposite last page.

Look how uniform Sunbeam Bread is

...*LIGHTNIN Mixers help make it that way!*

Uniformity extends right down to the crumb, in *Sunbeam* Bread.

Even and tender, this bread is entirely free of coarse structure and large air holes. If you tear a slice in two, the break is straight, not ragged as with some bread.

Continuous dough mixing does it

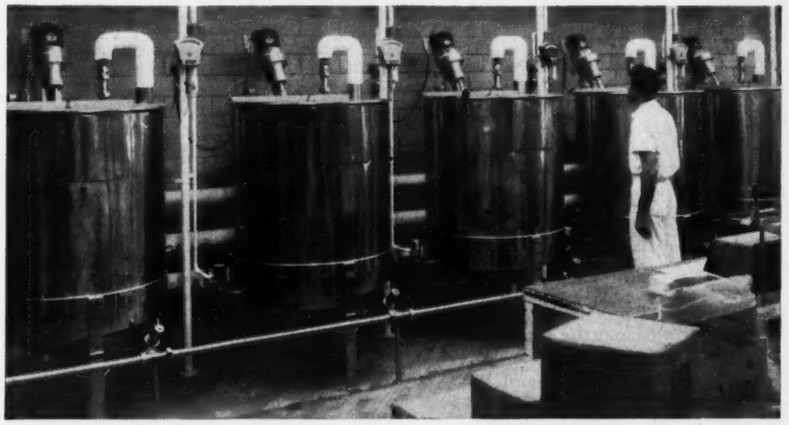
My Bread Baking Company of New Bedford, Mass., introduced uniform small-cell structure into their *Sunbeam* brand three years ago — when they started producing bread by the continuous Do-Maker Process. The process has led to the sale of more and better *Sunbeam* bread than ever before.

Every one of My Bread's broth blenders is equipped with a LIGHTNIN Portable Mixer. With gentle, thorough mixing throughout the fermentation period, the LIGHTNINS help eliminate flour scaling. *Sunbeam's* texture is smoother as a result of this thorough distribution of ingredients.

No mixer maintenance

Operating costs have been reduced at My Bread Baking Company through greater efficiency. LIGHTNIN Mixers have contributed to that efficiency. In the three years that LIGHTNIN Mixers have been in operation there, no maintenance has been required.

Good mixing like this doesn't just happen. It's *engineered* into the process. Where would *you* like to improve uniformity — cut processing costs — gear up for more profitable operation? Your LIGHTNIN Mixer representative will be glad to show you how you can do it with engineered fluid mixing. For fast competent help, call him — or write us today.



BROTH IS BLENDED at My Bread Baking Company by LIGHTNIN Portable Mixers. Each LIGHTNIN provides just-right gentle, thorough mixing during fermentation. Can your process benefit from this "engineered approach" to fluid mixing?

FOR LATEST MIXING INFORMATION and full description of LIGHTNIN Mixers, send for these helpful bulletins:

- ☐ B-102 Top or bottom entering; turbine, paddle, and propeller types: 1 to 500 HP
- ☐ B-103 Top entering; propeller types: ¼ to 3 HP
- ☐ B-108 Portable: ⅛ to 3 HP
- ☐ B-104 Side entering: 1 to 25 HP
- ☐ B-112 Laboratory and small-batch production types
- ☐ B-109 Condensed catalog showing all types
- ☐ B-111 Quick-change rotary mechanical seals for pressure and vacuum mixing
- ☐ B-107 Data sheet for figuring mixer requirements

Check, clip, and mail with your name, title, company address to:

MIXING EQUIPMENT Co., Inc., 132-a Mt. Read Blvd., Rochester 11, N.Y.

In Canada: Greey Mixing Equipment, Ltd., Toronto 10, Ont.

Lightnin® Mixers

MIXCO fluid mixing specialists

(Continued from preceding page)

prove quality and prevent excessive losses in product.

Description: Material flows over stainless steel prongs, magnetically energized by Alnico V castings. Ferrous particles are attracted by the energized prongs and are stored out of the flow stream. Unit is cleaned by breaking magnetic contact and removing filter insert.

(Permanent magnet filters are manufactured by Magni-Power Co., Dept. FP, Magni-Power Bldg., Wooster, Ohio. Check 7099 opp. last page.)

Flexibility, smooth bore, light weight features of polyethylene pipe

Uses: For piping water and other liquids. Suitable for corrosive materials.

Features: Light weight and flexibility contribute to ease of installation. Smooth bore cuts resistance to flow and

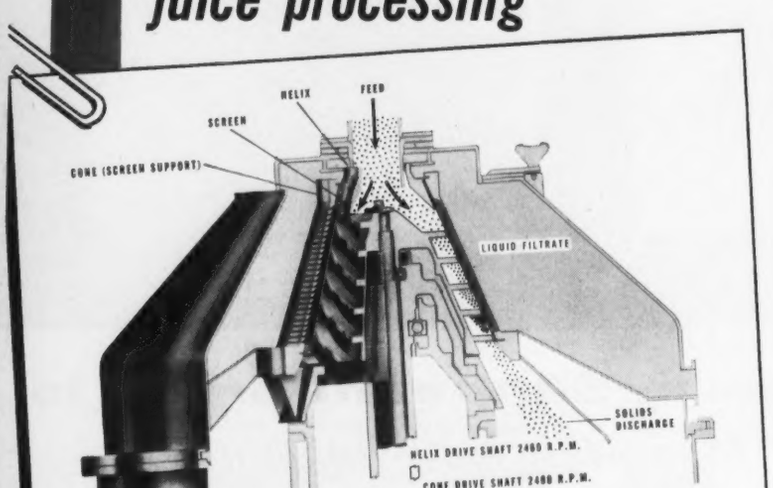
Workability simplifies installation

discourages adhesion of lime and algae. An 800′ line can be laid with one fitting. This eliminates loss of head encountered with metal lines when a number of fittings are required.

Description: Polyethylene pipe is made in ½, ¾, and 1″ sizes in 75 lb pressure-rated series and 1¼, 1½, and 2″ in standard-wall series. Service temperature range is from −50 to 125°F.

(Supplex pipe is made by American Hard Rubber Co., Dept. FP, 93 Worth St., New York 13, N. Y. Check 7100 opposite last page.)

NOW... Dynamic Separation for fruit and vegetable juice processing



MERCONE MODEL 400 SCREENING CENTRIFUGE

the Mercone Screening Centrifuge

Dynamic? Yes, both in operation and performance the Mercone Screening Centrifuge is designed to provide *continuously*, high rate separation of pulp into dry solids and liquid filtrate.

Basically, operation consists of subjecting a high rate, positive feed to centrifugal force along an increasing diameter screen. Liquid is spun through the screen by a force of 1800 centrifugal gravities, solids are moved spirally down the screen by a helix conveyor. With the increase of screen diameter higher G.'s are encountered and solids form a dense bed through which the liquid passes. This filtering action results in greater filtrate clarity than screen openings would normally indicate.

The feasibility of this new separation principle has been proven conclusively in small scale test runs. Applied to the dejuicing and/or dewatering of pineapple juice (milk and beverage), apple, tomato and carrot pulps and the dewatering vegetable matter, Mercone centrifugal screening has consistently produced results ranging from good to excellent both in desired clarity and capacity.

Perhaps you require higher capacities or better performance in your present operation or more specifically there may be a "problem separation" in your flowsheet. If so, high speed Mercone centrifugal screening may produce answers of a particularly advantageous nature to you. For more complete information just drop a line outlining your particular application, to Dorr-Oliver Incorporated, Stamford, Connecticut.

Mercone is a trade mark of Dorr-Oliver Incorporated

DORR-OLIVER INCORPORATED
WORLD-WIDE RESEARCH • ENGINEERING • EQUIPMENT
STAMFORD • CONNECTICUT • U.S.A.

When inquiring check 7098 opposite last page

What's Your Problem?

CORING? • TRIMMING?
PEELING? • STEMMING?
COUNTING? • FILLING?
SORTING? • COLOR-GRADING?

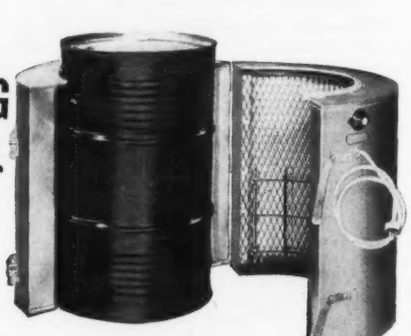
SEE THE ANSWERS AT THE CHICAGO CONVENTION . . BOOTH . .

Magnuson Engineers, Inc.
509 Emory Street
San Jose, California

24

When inquiring check 7101 opposite last page

WARMS ANYTHING IN METAL DRUMS UP TO 450°F



Automatic **Palmer DRUM WARMER**

A PORTABLE ELECTRIC OVEN in two models for 55 or for 30 gallon steel drums.

Saves Time—Saves Money. Makes removal from drum by dipping, pouring or pumping, easy and convenient, for any viscous material that handles better when warm.

Operates automatically and economically. Two hinged halves, well insulated, fit around drum at point of use—eliminates handling hot drums. Supplied for 115, 208, 230 or 460 volts, single, or three phase. Catalogue, prices and specifications on request. Write today!

HAROLD L. Palmer COMPANY

2980 West Davison Ave., Detroit 38, Michigan, Phone TUlsa 3-1100

When inquiring check 7102 opposite last page

Stainless displacement pumps

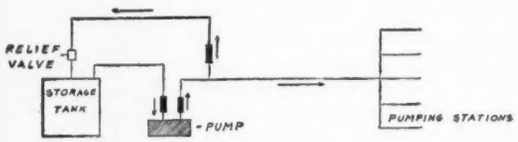
solve corrosion pulsation problems

in meat curing operation at Merkel, Inc., Long Island, N. Y.

Needle operators inject hams with curing brine

Problem: Corrosion of equipment and air entrainment due to intermittent flows were problems encounterd by Merkel, Inc., Long Island, N. Y., in their meat curing operation. The cure — a concentrated brine — is injected into hams, using stitch and artery pumping methods, by needle operators at battery of 12 injection stations.

Solution: Stainless steel pumps with neoprene impellers were installed for this operation, together with a corrosion-resistant relief valve to shunt excess brine back to reservoir at suction side of pump (see diagram). In this system, brine is

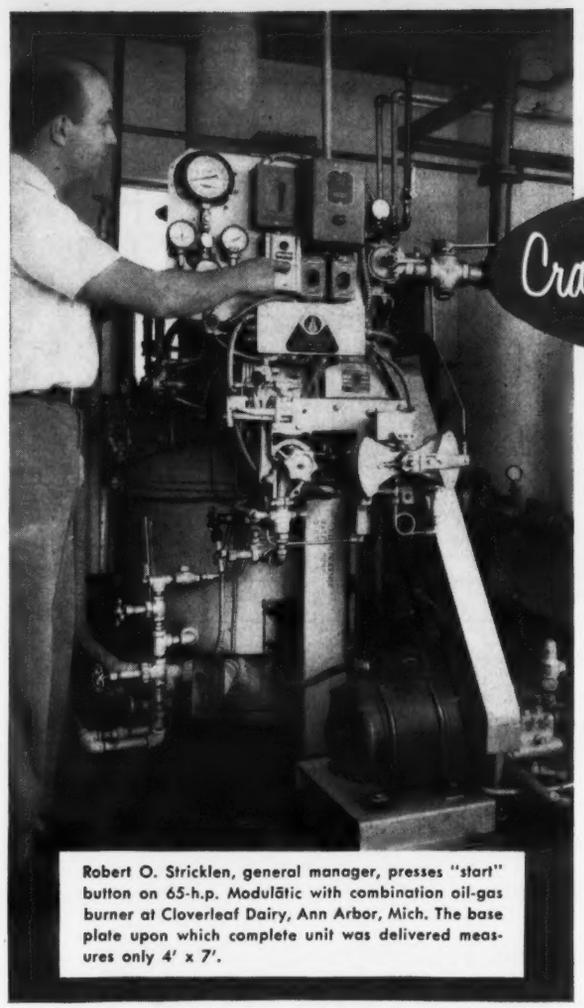


Schematic diagram indicates flow of brine

delivered at 60 psi at rates up to 10 gpm to any or all of injection stations. Continuous circulation prevents salt precipitation in pumps and piping. Pumps produce 3500 displacement strokes per minute — providing constant, linear flow.

Results: System has been in operation nearly two years, and no corrosion or pulsation problems have been encountered.

(All-Chem stainless steel pumps were supplied by Eco Engineering Co., Dept. FP, 12 New York Ave., Newark, N. J. . . . or for more information check 7103 on form opposite last page.)



Robert O. Stricklen, general manager, presses "start" button on 65-h.p. Modulātic with combination oil-gas burner at Cloverleaf Dairy, Ann Arbor, Mich. The base plate upon which complete unit was delivered measures only 4' x 7'.

Starved for steam?

Cramped for space?

. . . here's how **Cloverleaf Dairy** solved both of these problems **— saved time and money, too!**

Like all dairies, Cloverleaf uses a lot of steam for pasteurization, cleanup, sterilizing milk bottles, sanitizing handling equipment and cans. They needed more steam than their old boiler could supply—and they needed more room—but the only possibility for plant expansion was a vacant space which scarcely held an automobile.

What to do? *Install a Modulātic Steam Generator, of course!* Today, in less than half of this small building-extension, Cloverleaf produces their full steam requirements, and uses the rest of the addition for storage. What's more, you'll now find washing equipment and a new storage tank where the old boiler room and coal bin used to be.

"But just as important," says Mr. Stricklen, "is Modulātic ability to give us plenty of steam at the constant pressure we want . . . to give us 2-minute steam from cold starts. Now we have no overnight firing, no waiting, no interruptions in production—yet our steam costs are at least 10% lower, without downtime or maintenance except normal servicing."

MODULĀTIC STEAM GENERATOR

— world's most compact power-package

MODULĀTIC FACTS IN BRIEF

Eight Sizes	10 to 160 h.p.
Pressures	2 to 1000 p.s.i.
Fuel	Oil, Gas, or Combination Burner
Floor Area (160 h.p.)	5' x 8'
Height (160 h.p.)	6'-10"
Floor Load (max.)	150 lbs./sq. ft.
Operation	Automatic
Number in Use	Over 13,000

No separate enclosure, expensive stack, or special foundation needed. Multiple-unit installations can have a single, coordinated control.

If you use steam for heating, power, or processing, the self-contained, pushbutton Modulātic is a development you should surely investigate. It's clean, quiet, follows fluctuating load up or down with unmatched speed and accuracy—just set controls for the pressure you want, Modulātic does the rest! Why not mail the coupon *right now*?

VAPOR HEATING CORPORATION

80 E. Jackson Blvd., Chicago 4, Illinois, Dept. 7-A

Please send me free 12-page Modulatic Booklet No. 586.

Name_____ Title_____

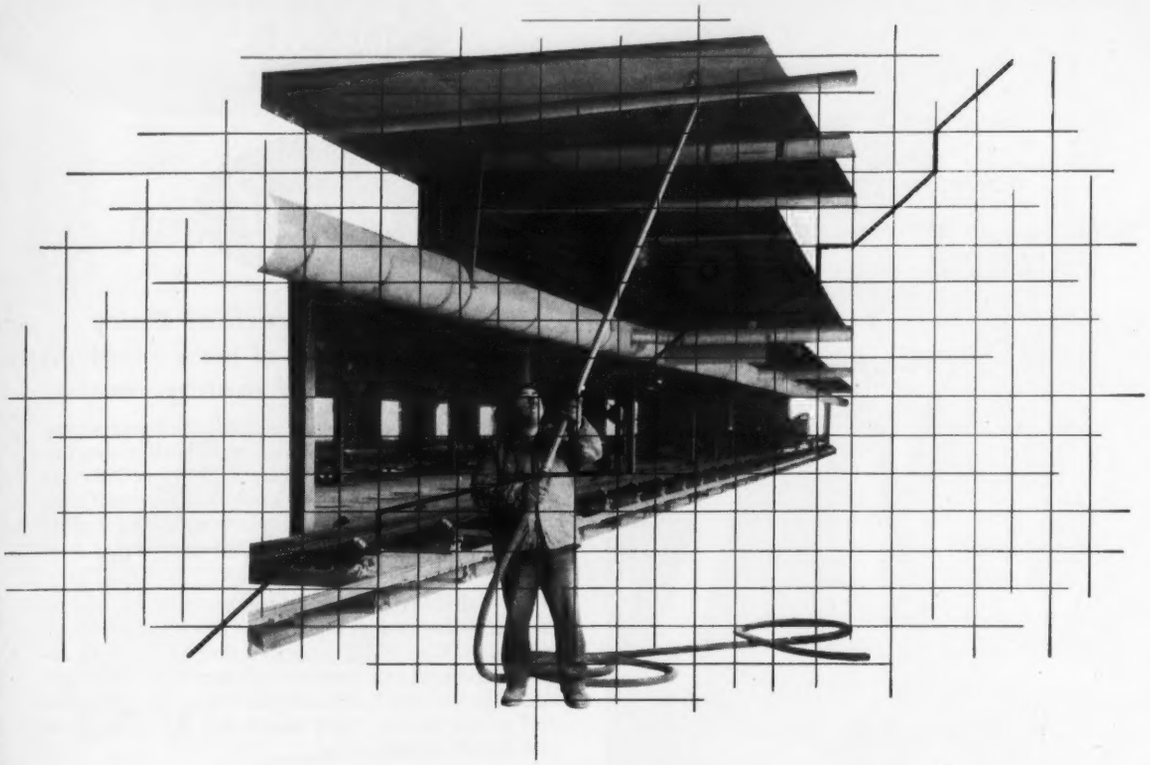
Company_____

Street_____

City, Zone, State_____

When inquiring check 7104 opposite last page

Hoffman engineered systems get **results:**



New York Port Authority finds that

HOFFMAN STATIONARY VACUUM CLEANING SYSTEM

removes dust...lowers cost...avoids danger, in its grain terminal!

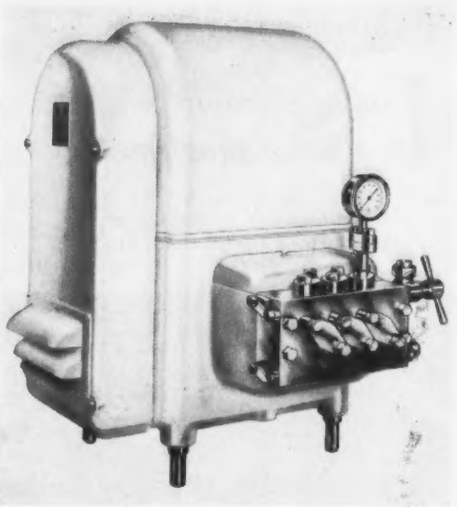
And here's how: the installation of the specially designed Hoffman pneumatic system enables operators to get at **all** the grain dust: not merely on floors and lower walls, but high up, on remote ledges and along pipes. Special tools, like the goose-neck brush shown above are helping keep the terminal **thorough**-cleaned . . . to eliminate the hazard of dust explosion . . . to wipe out possible contamination points where insects could breed . . . to slice a big margin off labor costs.

If dust is hiding higher costs in **your** plant, mill or elevator, write today for a no-obligation estimate of the best way to get rid of it – for good. And get the full printed story on the New York Port Authority grain terminal, yours for free.

AIR APPLIANCE DIVISION **U.S.HOFFMAN MACHINERY CORPORATION** DEPT. F.P., 103 FOURTH AVENUE, NEW YORK 3, N.Y.

AIR APPLIANCE DIVISION Multistage Centrifugal Blowers and Exhausters. Pneumatic Conveying Equipment. Industrial Vacuum Cleaning—Portable and Stationary Systems. Continuous Metal Strip Driers. "Smoothflow" Fittings and Tubing. **INDUSTRIAL FILTRATION DIVISION** Machine Tool Coolant Clarifiers—Flotation, Mechanical, and Magnetic. Lubricating and Insulating Oil Conditioners, Filters, and Vaporizers. Solvent Recovery Systems—Vacuum Stills and Filters. **ORDNANCE EQUIPMENT DIVISION** Special Pneumatic Conveying Systems, High Efficiency Centrifugal Separators, Stationary and Portable Vacuum Cleaning Equipment. Process Equipment. Pneumatic Systems for Radioactive Materials.

When inquiring check 7105 opposite last page



700 to 1500 gph capacity units offer . . .

three-phase homogenization

Special valve design contributes to high efficiency of break-up, dispersion

Uses: For homogenization of wide range of products such as milk, dairy products, peanut butter, fruit juices, condiments, and liquid starch.

Features: Special valve design produces three distinct phases of homogenization, including complete break-up, dispersion, and viscosity control of product in process. Consistency of foods such as peanut butter is improved. Sanitary design emphasizes "straight-through" cylinder passages to eliminate dead ends to facilitate thorough yet easy cleaning. There are no internal threads. All parts in contact with product handled are 18-8 stainless steel. Lubrication is automatic and positive.

Description: Dimensions of newest larger frame model No. 4 are: 54¼x57⅞x65" high. Five rated capacities are offered for this No. 4 frame: 700, 800, 1000, 1200, and 1500 gal per hour — pressures to 3000 lb. Three smaller frame sizes with capacities from 75 to 600 gph are also available.

All details reportedly meet 3A dairy standards and other sanitary requirements for construction.

(HomoVitor sanitary homogenizers are built by American-Marsh Pumps Inc., Dept. FP, Battle Creek, Mich. Check 7106 opposite last page.)

For more information on product at right, specify 7107 . . . see information request blank opposite last page

We ask you...

what other sweetener
does anything <u>like</u>
this kind
of pre-selling
for your dietetic line?

The Saturday Evening
POST
SUNDAY
NEW YORK'S PICTURE NEWSPAPER
TIM
THE WEEKLY NEWSMAG

All these publications carry full-color Sucaryl advertising month after month after month. No other calorie-free sweetener even comes close to matching the impact of this consumer advertising. Small wonder Sucaryl outsells all others wherever it's displayed. Or that the name carries such sales magic on the label of your dietetic product.

Let us send you some Sucaryl to experiment with. You'll probably find you can use it without altering your manufacturing processes. Just write and specify whether you want Sucaryl Sodium or Sucaryl Calcium. Chemical Sales Division, Abbott Laboratories, North Chicago, Ill. Abbott

Here's Sucaryl's "ad-of-the-month" for February

27 calories per lump, when you sweeten your coffee with sugar

You can save a lot of calories by sweetening with Sucaryl

and you can't taste the difference

Sucaryl makes it easier for you to watch your weight . . . by giving you wholly natural sweetness in your diet . . . without one single calorie. Sucaryl is the first calorie-free sweetener that tastes just like sugar in ordinary use. You'll find it sweetens your coffee to perfection; even if you're a three-lump drinker, you can have it as sweet as you want and with nary a calorie in a lifetime.

Sucaryl works just as well in any other drink, or cereal or fruit. Cook with it, bake with it; use it practically anywhere you would sugar. Sucaryl, of course, is for anyone sensibly counting his or her calories, and for those who cannot use sugar. You get Sucaryl in tablets or solution; low-salt diets call for Sucaryl Calcium. Abbott Laboratories, North Chicago, Illinois and Montreal, Canada. Abbott

AT DRUG STORES EVERYWHERE

Sucaryl®

Non-Caloric Sweetener—No Bitter Aftertaste

BRIEFS from contemporary publications

Here's a quick look at articles appearing in other technical and business magazines

Dispensing rack for jars

A dispensing rack for jars of baby food is being installed in retail stores. It holds 33 jars in a space 15 inches deep and 18-¾ inches high. Made of transparent plastic, it facilitates inventory and forces first-in-first-out movement. 1 page, 1 photo, 1 diagram. (*"Food Packaging," October* 1956, *page* 14)

Readable review of computers

A series of four articles followed by the transcript of a discussion period gives an explanation of digital and analog computers and their uses. Engineering rather than accounting applications are stressed. Unusually comprehensive and informative for non-mathematicians. 21 pages, 17 photos, 10 diagrams, 4 tables, 9 graphs, 35 references. (*"Chemical Engineering Progress," Nov.* 1956, *page* 451)

Diffusion of gases through films

In a pair of articles, the theory of gas movement through packaging films is presented, and useful relationships are illustrated with actual data. 10 pages, 4 diagrams, 6 graphs, 8 tables, 1 photo. (*"Tappi," November* 1956, *page* 737)

Effects of phosphates on meats

Studies of the effects of orthophosphates and pyrophosphates on meats showed (1) no difference between them, (2) increased water binding over controls, primarily due to effects of pH and ionic strength, and (3) diminishing effect with rising temperature. Iodides had a greater effect but cannot be added to foods in effective quantities because of toxicity. 7 pages, 5 graphs, 5 tables. (*"Food Technology," November* 1956, *page* 546)

Ethylene oxide may destroy vitamins

Ethylene oxide, sometimes used in food treatment, destroys varying quantities of vitamins of the B complex, particularly thiamine, under some conditions. The mechanism is obscure, making it impossible to predict from present knowledge what will happen in a particular food to a particular vitamin. 4 pages, 2 tables. (*"Agricultural & Food Chemistry," November* 1956, *page* 956)

Chilling or freezing fish at sea

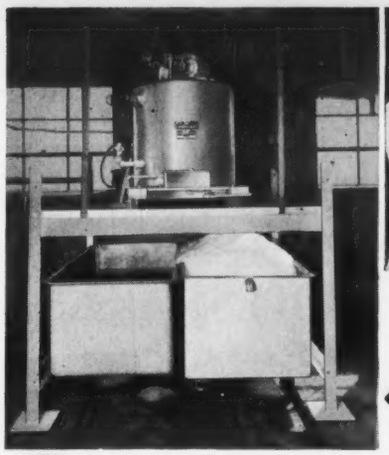
Design guidance for brine systems on fishing vessels is given from experience with "Delaware," the experimental vessel of the Fish & Wildlife Service. 3 pages. (*"Industrial Refrigeration," October* 1956, *page* 30)

Carry-through properties of tocopherols

Tests show all tocopherols to have carry-through value as antioxidants in cooked and baked products. Order of carry-through value for the four tocopherols is the same as the order of antioxidant potency. Combinations with other antioxidants are sometimes better, sometimes worse than either alone. 2 pages, 4 tables. (*"Journal of the American Oil Chemists' Society," November* 1956, *page* 527)

New films for flexible packages

A series of five articles and a directory of suppliers deal with flexible packaging materials — those on the market, those in development, and those in research. Laminates are featured: properties and typical uses. 18 pages, 20 photos, 1 chart. (*"Food Engineering," November* 1956, *page* 69)



Polarflake ice at Dorecrest is used for chilling turkeys, chickens, ducks, rabbits, Cornish game.

The Vilter Polarflake ice maker at the Dorecrest Poultry Company has a modern poultry dressing line capable of handling 2,200 birds per hour.

Q. Why is Polarflake ice so popular among poultry and specialty item processors?

A. because Vilter POLARFLAKES are IDEAL for chilling and packing

and cost less to use*

The Vilter Polarflake ice maker at the Dorecrest Poultry Company, one of the leading poultry processors in Milwaukee, was installed so that the ice would fall directly into carts to minimize ice handling. The carts are wheeled to either the cooling vats or packing crates. About one half the ice is used for chilling and the other half is used for packing. During the summer the Polarflake machine is operated for 24 hours per day. During the night, the ice is stored in a 32° cooler.

Polarflakes can be made in your plant as needed—at costs far below purchased ice. Polarflakes are cold, crisp flakes of ice. Easy to handle, they pack around the product, yet will not arch as the ice melts. Polarflakes expose maximum chilling area . . . chill quickly. They preserve the appearance of the bird, and won't damage skin. Poultry is kept clean and fresh.

You can buy the compact 3-to-5-ton Polarflake machine with a Vilter compressor, or you can use existing refrigeration equipment during off-peak periods. Polarflake ice can be stored in any type of suitable bin until it is needed.

Write for full information about the Vilter Polarflake unit for your application.

* You save with Polarflake ice just as you save whenever you use efficient Vilter refrigeration equipment.

Vilter QUALITY CRAFTSMANSHIP that lasts . . . ENGINEERING DESIGN that guarantees performance

REFRIGERATION and AIR CONDITIONING

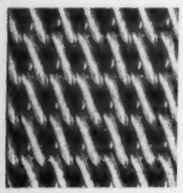
THE VILTER MANUFACTURING COMPANY, Milwaukee 7, Wisconsin

Air Units • Ammonia & Freon Compressors • Booster Compressors • Baudelot Coolers • Water & Brine Coolers • Blast Freezers • Evaporative & Shell & Tube Condensers • Pipe Coils • Valves & Fittings • Pakice & Polarflake Ice Machines

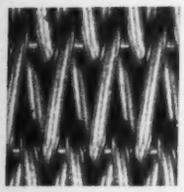
When inquiring check 7108 opposite last page

How to select WIRE MESH CONVEYOR BELTS for Continuous FOOD PROCESSING

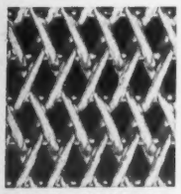
BALANCED—High tensile strength, low ultimate cost belting for operation up to 1300°F. Resists distortion. Designed for straight travel.



DUPLEX—Compact structure of great density provides high tensile strength. The close mesh provides smooth surface for carrying small products such as peas, pelletized feed.



GRATEX—Close spirals retain the advantages of Balanced weave, while producing a semi-closed mesh and adding strength. For cold, medium and some high temperature applications.



DOUBLE-BALANCED—A widely used weave, combining open mesh of Balanced weave with strength of Gratex. For cold, medium and some high temperature applications such as freezing and baking.

As you know, wire mesh conveyor belts are widely used for combining movement with processing in many continuous food processing operations—washing, blanching, freezing, baking, etc.—largely because of the need for increased operating efficiency and improved sanitation in handling.

However, there is no single type of belt construction suitable for all food processing operations. Some require rather fine mesh for handling such products as peas or cut vegetables; some high resistance to the corrosive attack of food acids and salt; others must be constructed for high temperature or sub-zero service in baking or freezing. That's why Cambridge has nine basic weaves available in any metal or alloy. The four shown here are the most widely used in food processing.

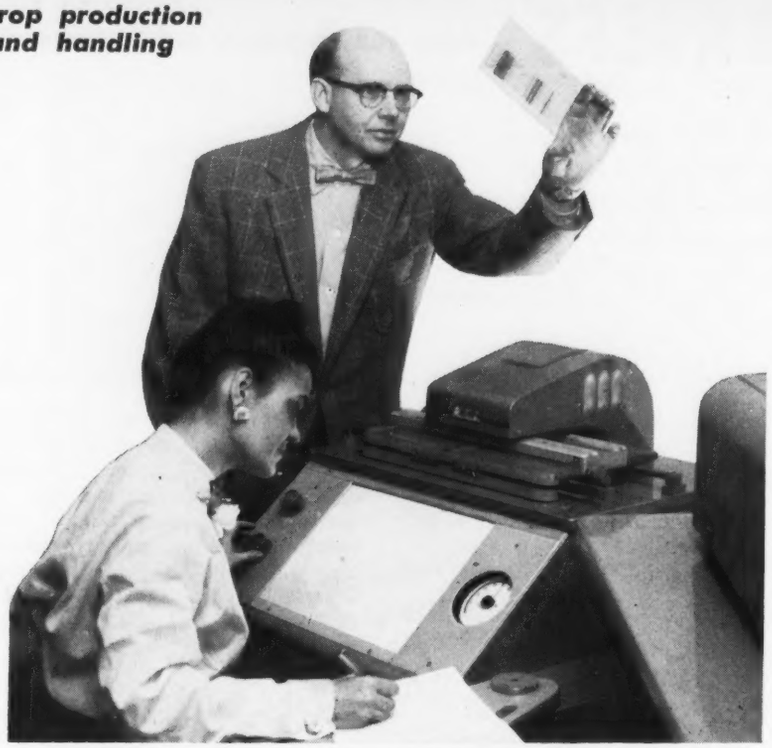
There are several factors that generally influence selection of weave, mesh size and metal or alloy from which the belt will be woven. Among them are: size, shape and consistency of the product to be handled; temperatures to which belt will be subjected; presence of wet or corrosive conditions. Even after these have been decided, overall belt construction must be designed to meet individual requirements—type of drive, selvage, support and special surface attachments must be selected.

You can see, then, that designing for continuous food processing with wire mesh conveyor belts is not a simple "nuts and bolts" job. Ramifications build up rapidly to demand the service of a specialist. That's why Cambridge maintains a staff of competent Field Engineers to help you select the Wire Mesh Conveyor Belt to make your installation most efficient. You can rely on the experience of these engineers to specify just the right belt for you. In addition, they are thoroughly familiar with basic conveyor design. For the name of your nearest Cambridge Field Engineer, look under "Belting, Mechanical" in your classified telephone book. Or, write direct. Also ask for 130-page Reference Manual of specifications and design information.

THE CAMBRIDGE WIRE CLOTH COMPANY, DEPT. H, CAMBRIDGE 1, MARYLAND.

When inquiring check 7109 opposite last page

crop production and handling



Howard Bedell interpreting the wave lengths on the film taken from a spectrograph. Operator records type and amount of mineral found in leaf sample

fertilizer requirements determined more reliably

. . . through a laboratory which is set up to analyze leaves spectrographically on a nation-wide basis

ERNEST NORDLINGER, Assistant Editor
Verified by **HOWARD BEDELL,** President
National Spectrographic Laboratories

Conventional soil testing procedures provide too limited information concerning nutritional condition of a crop as it grows. A more reliable method is leaf analysis, which furnishes data on what the crop is actually getting from the soil. In turn, a healthy-appearing crop will have high nutritive values when it is harvested and brought to the processor's receiving dock. Spectrographic methods have been found extremely efficient for determining the elements in leaves — but the equipment

Operator places dried leaf sample in arc-spark stand of spectrograph prior to burning. At right is excitation unit which provides and controls light source. On lab table (left) is Bausch & Lomb dual grating spectrograph

Spectroscopy, as a science, has been known for several hundred years. It was originally used by astronomers to determine the chemical composition of the stars. Most recently it has become famous as the instrument which helped unlock the secrets of the atom. It can also determine the amount of minerals in leaves.

The process is as follows: the dried leaf sample is burned in an electric arc having constant characteristics. Each element in the sample gives off a characteristic color or wave length, the amount proportional to the amount of that element in the sample. This means furnishes a qualitative and quantitative analysis of the leaf. To determine this information by known chemical methods would require several days, while spectroscopy will furnish the analysis in a matter of hours. The main instrument is the spectrograph, a special type of camera, which records elements present as lines (wave lengths) on a film.

Most of the spectrographic methods in use today were developed for the metal working industry to determine minor elements and impurities in finished metal products. Accompanying photos show some of the operations required to make leaf analysis.

is expensive and requires trained personnel.

Beginning this month, a spectrographic laboratory with headquarters in Cleveland will provide a full-scale leaf analysis service on a nation-wide basis for any commercial crop. This laboratory has cooperated since 1949 with Michigan Agricultural Experiment Station in organizing methods to determine fertilizer needs of fruit trees. A trial service was set up, limited to Michigan fruit producers. Its success has prompted this nation-wide service.

Elements to be tested: This service will provide quantitative analysis for the following nutrient-elements; nitrogen, manganese, phosphorus, po-

(*Continued on next page*)

NO REBORING—

NO KEYSEATING—

NO MACHINING—

NO WAITING!

TAPER-LOCK SPROCKETS
SINGLE AND DOUBLE STRAND!

NOW Taper-Lock *Double* Strand Sprockets are available—from stock—ready for the shaft without re-machining!

They offer all the advantages of Taper-Lock mounting. Easy on! Easy off! Precision machined at the factory, they come to you with accurate, concentric bores—insuring full contact between hub and shaft. Taper-Lock grips with the firmness of a shrunk-on fit!

There is no flange, no collar, no protruding part. Flush design means *safety*... If the sprocket becomes worn, you replace only the tooth part. The bushing is used again and again. And Taper-Lock bushings are interchangeable in Dodge Taper-Lock Sheaves, Couplings and Conveyor Pulleys!

Taper-Lock Sprockets and Dodge Roller Chain (made to ASA standards) are stocked by Dodge distributors. Single Strand sizes range from No. 40 to No. 160, up to 112 teeth; Double Strand from No. 40-2 to 80-2, up to 102 teeth. Write for Bulletin A-644 containing selection, installation and maintenance data.

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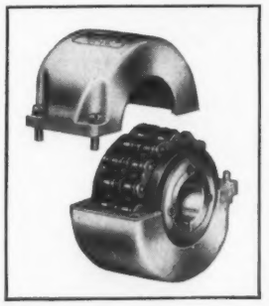
CALL THE TRANSMISSIONEER, your local Dodge Distributor. Factory trained by Dodge, he can give you valuable help on new methods. Look for his name under "Power Transmission Machinery" in your classified phone book, or write us.



TAPER-LOCK CHAIN COUPLINGS

Accommodates common minor shaft misalignments. Provides strong, compact coupling. Available with covers, for appearance, safety, dirt protection and lubrication—which increases coupling life.

When inquiring check 7110 opposite last page

Fertilizer Requirements

(Continued from preceding page)

tassium, calcium, magnesium, iron, copper, zinc, and boron.

Samples are to consist of about 100 dried (not fresh) leaves collected from a representative group of plants or trees. Stems of leaves must be included. Prior to drying, all leaves must be washed to remove spray residue and dirt. For comparison purposes, separate samples should be taken from healthy and deficient appearing plants. Leaves can be dried at room temperature in the bag to be sent to the laboratory.

Processor to make interpretation: The laboratory will provide the analysis, but no interpretation or fertilizer recommendations. The processor will be expected to "code" or identify each sample. The processor should also keep such plant or tree information as variety, age, extent of growth, possible or previous yields, fertilizer programs used during previous years, spray materials applied, and if possible, soil test results.

To the grower, information on leaf analysis should improve his fertilizer practices.

To the processor, this analysis offers another tool to secure top quality crops with high nutritive content.

(Leaf analysis costs are available from the National Spectrographic Laboratories Inc., Dept. FP, 6300 Euclid Ave., Cleveland 3, Ohio . . . or for more information check 7112 on form opposite last page.)

KAMLOK
QUICK COUPLERS

OPW CORPORATION
OPW
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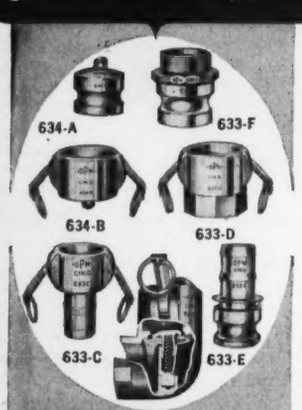
SLIPS ON CAM TIGHTENS
HOLDS TIGHT NEVER FAILS

The Fastest, Safest, Surest Coupling Known



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BRONZE • ALUMINUM • MONEL
STAINLESS STEEL • SEMI-STEEL

ALL STYLES OF ADAPTORS FIT IN ALL STYLES OF COUPLERS OF THE SAME SIZE.
Perfectly tight, no leak connection in seconds. Kamloks couple and uncouple instantly regardless of "hook-up".
Write for Free Bulletin F-10

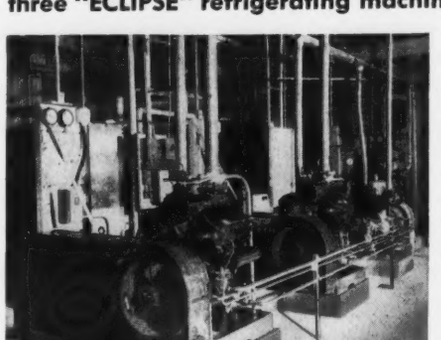
JORDAN CORPORATION
Industrial Sales Division of OPW Corporation
6013 Wiehe Rd., Cincinnati 13, Ohio

When inquiring check 7111 opposite last page

Famous Puffin Biscuits Made and Kept Fresh With Frick Refrigeration

The new million-dollar plant of Ready-to-Bake Foods Inc., at Charlotte, N.C., cools its entire output of Puffin Biscuits with three "ECLIPSE" refrigerating machines. Storage temperatures are in the low 30's. A fourth Frick compressor cools the jackets of the dough mixers. Installation by Piedmont Engineering Corp., Frick Distributors at Charlotte.

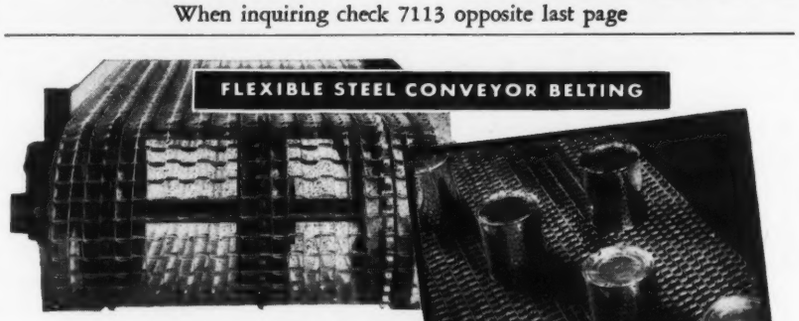
Just how refrigeration is applied to widely varying industries in the Carolinas is explained in a recent Frick publication. Write for your copy.



Four Frick Refrigerating Machines, with full-automatic controls, in service at Ready-to-Bake Foods Inc., Charlotte, N.C.

FRICK CO.
WAYNESBORO PENNA.

When inquiring check 7113 opposite last page



LA PORTE
moves food up • down • horizontally

You can handle every food conveying operation, from loading hopper to shipping dock, with this versatile, sanitary belt that is quickly and easily converted for flight conveying by attaching the La Porte cleat.

The steel mesh feature allows circulation of air and liquids around products in process; also facilitates cleaning and sterilizing with steam gun or hot water. La Porte belting will not weave, creep nor jump. Its rugged construction assures long, economical service and low maintenance costs.

Available in any length and practically any width.

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Write TODAY for illustrated literature, prices.

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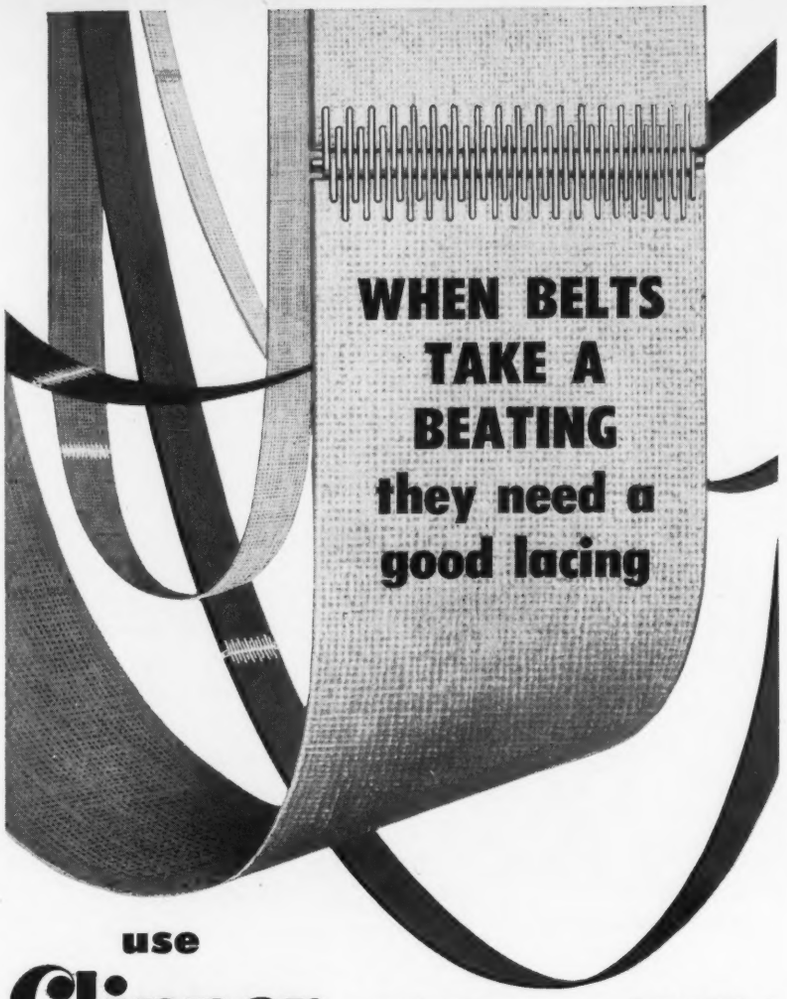

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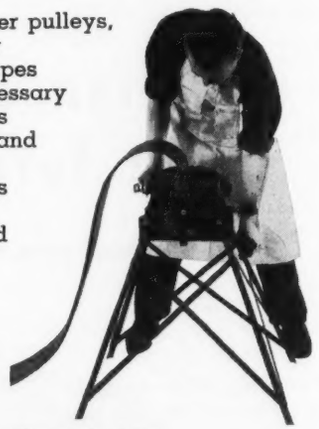
Clipper HOOKS and LACERS

High speeds, heavy loads, small-diameter pulleys, crowned rollers — these and many other conditions add up to hard wear for all types of belting, and weak spots cause unnecessary trouble. Make belt joints as durable as the belt itself. Use Clipper Hooks and Lacers. Clipper machine-lacing makes smooth, flexible, longer-lasting belt joints that save wear on expensive belts and machinery, slash costly maintenance and reduce unproductive downtime.

FOR MORE INFORMATION

Detailed product information and case history examples of Clipper machine-lacing benefits are contained in Bulletin No. 157. Send for your free copy today.



Ask your Industrial Distributor for Clipper Products

Clipper BELT LACER COMPANY

972 Front Ave., N. W. Grand Rapids 2, Michigan

When inquiring check 7115 opposite last page

Announce dates for annual canners, fieldmen short courses

Short courses and conferences for canners and fieldmen follow. These meetings are conducted cooperatively by state extension and experiment station specialists, and the state and regional canners associations. Full program for each meeting is available by writing to the Horticulture Dept., at the agricultural experiment station in which state the school will be held.

California—Feb. 4-5, University of California, Davis
Illinois—Jan. 9-11, Urbana Lincoln Hotel, Urbana
Indiana—Feb. 25-27, Purdue Union Bldg., West Lafayette
Iowa-Nebraska—Feb. 26-27, Iowa State College, Ames
Michigan—Feb. 4-6, Kellogg Center, East Lansing
Minnesota—Jan. 30-31, Kahler Hotel, Rochester
New York—Feb. 12-13, Agricultural Experiment Station, Geneva
Ohio—Jan. 28-29, Deshler-Hilton Hotel, Columbus
Pennsylvania—Jan. 30-Feb. 1, Nittany Lion Inn, State College
Tri-State—Jan. 28-29, Rutgers University, New Brunswick, N.J.
Wisconsin—Jan. 23-24, U. of Wisconsin, Madison

Liquid fertilizer applicator is tractor-mounted

Do-it-yourself applicator for liquid fertilizers permits the grower to top-dress or side-dress with liquid nitrogen or other solutions at the exact time and rate he desires, without waiting for a custom operator. Heart of the applicator is the Krause-Liberty hose pump described in USDA Farmers' Bulletin No. 2096. Universal tractor-mounting kit and several trailer applicator units are presented in illustrated, four-page leaflet.

"Liquid Fertilizer Applicators" is available from Krause Corp., Dept. FP, Hutchinson, Kan. When inquiring specify 7116 on form opposite last page.

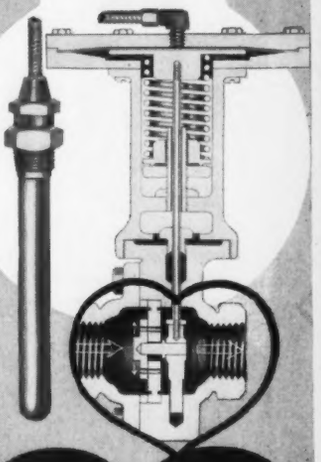
Cost studies made on field crates vs. bulk boxes in Michigan orchards

Authors present detailed research results for both apple grower and processor on the use of bulk boxes. Tables on labor, transportation, and container costs compare crates on pallets vs. bulk boxes. Final page of 20-page illustrated bulletin is devoted to limitations of bulk handling system.

Special Bul 409, "Handling Apples in Bulk Boxes", by Gaston and Levin, is available from Michigan State University, Agricultural Experiment Station, Bulletin Office, East Lansing, Mich.

OPW-JORDAN

No. 180
self-operating temperature control valve



the different and improved way to control temperature

- GUARANTEED DEAD END SHUT-OFF
- MORE ACCURATE REGULATION
- ELIMINATES NEED FOR PRESSURE REDUCING VALVE ON HIGH INLET PRESSURES

The unique basic design and exclusive features of this valve are responsible for its outstanding performance and long dependable service life. Durably constructed for hard, constant use, the compact, space saving, No. 180 offers the full advantage of accurate control with desired sensitivity of response.

For more facts, write for Bulletin J-180

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When inquiring check 7117 opposite last page

what is your
PULVERIZING
problem?

accept this offer by
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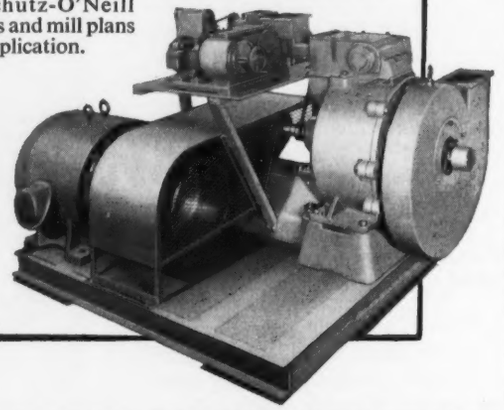
FREE TEST GRIND

OF YOUR MATERIAL SAMPLE

Without obligation to you, we'll grind a sample of your material in our Pilot plant, using a production model Schutz-O'Neill Superfine Pulverizer. This is a bonafide, no-strings offer to demonstrate to you the versatility, particle size range and capacity of Schutz-O'Neill Pulverizers. Write us for details.

OUR ENGINEERING TEST REPORT together with your processed product will be returned to you giving exact data and recommended Schutz-O'Neill equipment, methods and mill plans for your process application.

SCHUTZ-O'NEILL PILOT PLANT uses a standard production model 16″ Superfine Pulverizer, which provides up to 100 different pulverizing set-ups with a grinding range from 40 mesh to 5 microns.



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ULTRAFINE GRINDING WITH CONTROLLED PARTICLE SIZE RANGE

You'll find Schutz-O'Neill Superfine Pulverizers best for ultrafine grinding with controlled particle size distribution—yet their versatility also makes them adaptable to the complete grinding range from coarse to ultrafine.

Many heat sensitive products can be safely pulverized, because the grinding principle of impact with air attrition embodied in Schutz-O'Neill design keeps product temperatures down and helps control uniformity.

Typical Schutz-O'Neill applications are in the paint industry; major cocoa powder, sugar, spice and pharmaceutical manufacturers; processors of emulsifier gums, resin, plastic and seaweed extract powders and a great number of others. From 62 years of continuous manufacturing and field experience, Schutz-O'Neill may already have the answer to your problem. Superfine Pulverizers are made in six sizes ranging from 7½ to 125 horsepower with grinding chambers 12″ to 28″ in diameter.

Tell us your milling requirement—fineness, uniformity, increased output, lower cost—send us a sample of the stock you want to pulverize, state fineness and capacity desired, or send for Schutz-O'Neill bulletin.

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GRANULATORS
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AIR CLASSIFIERS
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HAMMERMILLS

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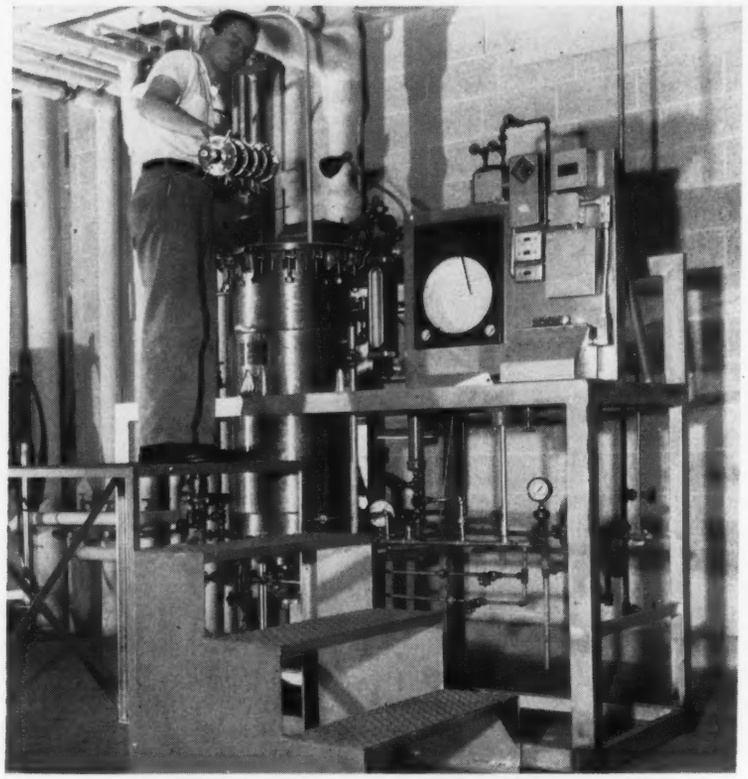


Agitator can be removed from vat without using overhead crane

Main complications of operating pilot plant fermenter are overcome by two-section shaft so that . . .

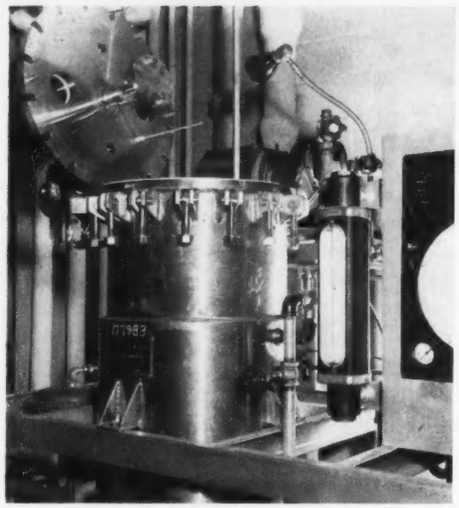
one man operates pilot fermenter

. . . without even occasional help

Problem: In common with many industrial pilot plant laboratories, one large midwestern university wanted a small scale vat fermenter which could be handled unaided by one man. Various departments of the university are engaged in both fundamental and development research requiring small production lots of yeasts, molds, and bacteria. These are used for further studies on isolation of enzymes and antibiotics, and to determine production efficiencies.

Solution: College installed a stainless steel fermenter with a magnetic coupling device to allow splitting the agitator shaft. Fermenter is 30-gal unit with swing-top cover, externally removable bottom bearing, and electronic antifoam control.

Closing the cover automatically engages



Fermenter with cover removed. Antifoam probe is seen on cover

magnetic coupling. Bottom bearing is used primarily to support the agitator shaft in a vertical position when vat is open. It also prevents whip during operation. Antifoam system controls addition of antifoam agent within 1%, either by predetermined additions or by probe demand. Electric counters keep track of amounts of antifoam added.

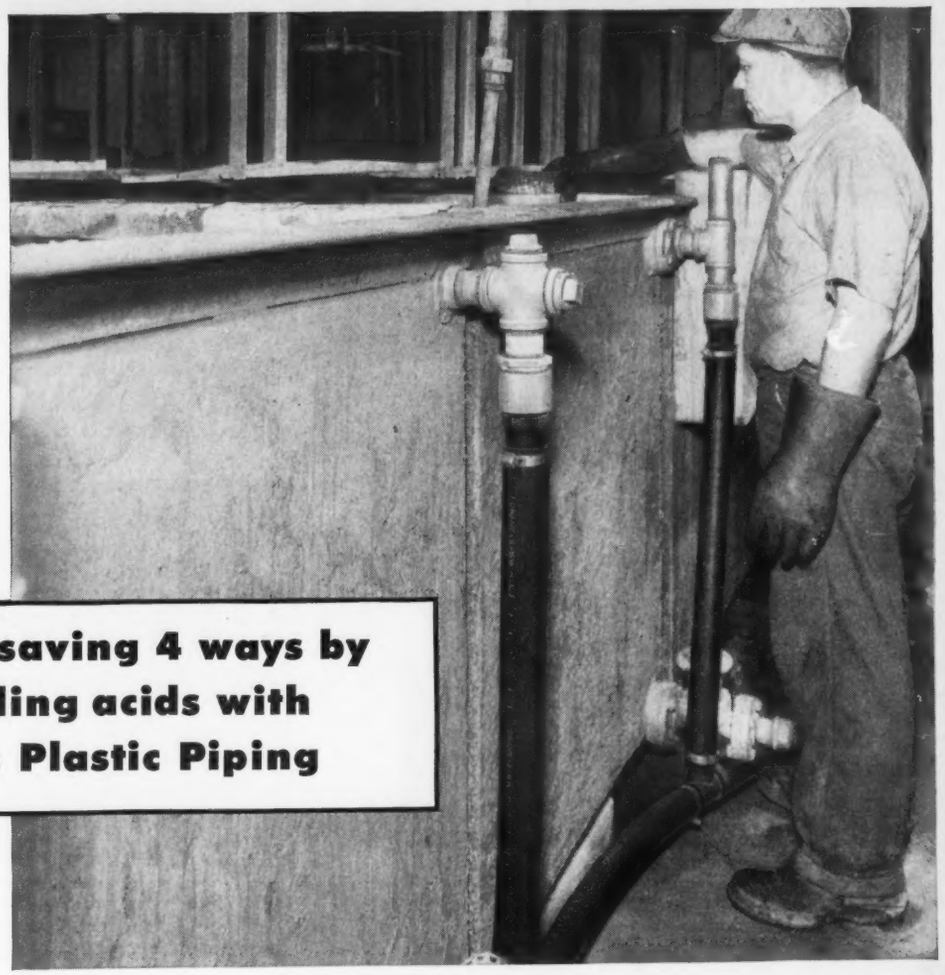
Results: University has found that one man can open the fermenter to clean; recharge; alter number, positions, and diameters of agitators; remove baffles; and make other changes without using an overhead crane. Time required to loosen head bolts, open cover, manually remove complete agitator, and reassemble for sterilization is only about ten minutes.

(Access-A-Bilt vat fermenter is product of Stainless & Steel Products Co., Dept. FP, 1000 Berry St., St. Paul 14, Minn. . . . or for more information check 7119 on form opposite last page.)

Sulfide precipitation without smell of H_2S

A new analytical reagent has been introduced which supplants hydrogen sulfide. It is usable wherever H_2S is indicated. Usually employed in 5% (by weight) aqueous solution, it can be used to replace reagents designed to supply sulfide ions in chemical procedures. Furthermore, through its use, the rate of generation of sulfide ions can be controlled.

(Sulfi-Down (specially refined and stabilized thioacetamide) is available from A. Daigger & Co., Dept. FP, Kinzie & Wells St., Chicago 10, Ill. . . . or check 7120 on form opposite last page.)



They're saving 4 ways by handling acids with Crane Plastic Piping

THE CASE HISTORY— Globe-Union Inc., leading storage battery builder, in its Milwaukee plant, might have decided plastic piping wasn't for them and let it go at that. Instead, they gave Crane plastic products a fair trial, and here are the results.

On hydrochloric acid lines to zinc-plating tanks, the metal pipe and fittings formerly used had to be replaced completely about every month. Corrosion was the cause.

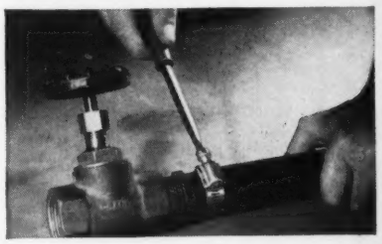
With Crane polyethylene pipe and Crane plastic fittings in this same service, after more than 3 months there is no sign of deterioration and no apparent need of early replacement.

On battery test tanks, Crane plastic piping, exposed to built-up sulphuric acid concentration, looks good as new after more than 4 months' service.

Savings with Crane plastic piping are adding up 4 ways. Plastic cancels the need for costlier metal pipe. It is installed in a fraction of the time it takes for metal pipe and fittings. It reduces installation to a one-man job with simple hand tools. The longer life of plastic is saving replacement, maintenance and housekeeping costs.

Proved in severest services, Crane plastic piping is giving Globe-Union equal satisfaction on many low-pressure air and water lines. Here freedom from sweating is another advantage of plastic.

Once you know the facts of quality-designed, quality-made Crane polyethylene pipe and Crane plastic insert fittings, you, too, will see many opportunities for saving with this modern piping. Call your local Crane Representative today, or write to address below.



Crane adapter makes plastic-to-metal joints easy

CRANE PLASTIC PIPING

VALVES • FITTINGS • PIPE • KITCHENS • PLUMBING • HEATING

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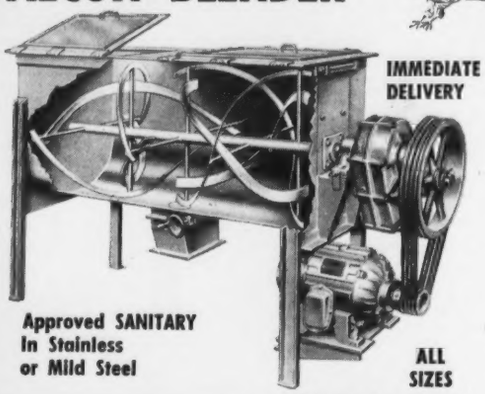
FALCON BLENDER



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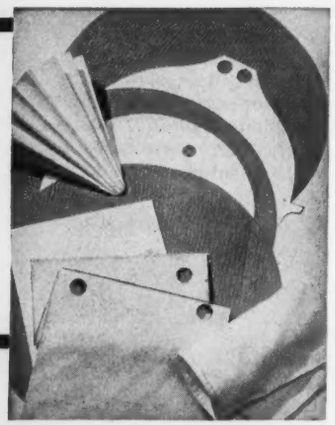
FILPACO FILTER MATERIALS



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quality control

Accuracy increased in melting point kit

Range now divided between two thermometers available as an accessory

Apparatus for melting point determination is available complete in a convenient kit. Newest version, shown below, features greater accuracy.

Initially, Monsanto's Dr. I. B. Johns Jr. eliminated the hazardous procedure of melting crystalline ma-

Apparatus for safe, accurate determination of melting point, all in handy kit

terials in a glass capillary attached to the bulb of a thermometer and immersed in a bath of hot oil or sulfuric acid. His solution: melt the crystals on a miniature electric hot-plate, under magnifier. This apparatus was converted into a practical instrument.

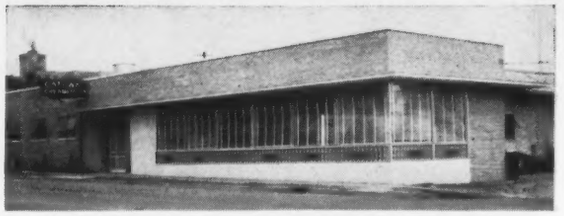
Improvements that followed included combining hot-plate control and control box into one compact unit. This includes a continuously variable transformer to control heating rate more closely; a tiny spotlight focused on the melting sample; packing thermometer bulb in silver wool to give faster heat transfer. By calibrating the hot plate with a series of standards, melting points of many products can be determined within 0.5°C.

Kit is supplied with full range thermometer — 20-300°C. Short range thermometers are available as separate kit at nominal price.

(Melting point apparatus kit is a development of Fisher Scientific Co., Dept. FP, 717 Forbes St., Pittsburgh 19, Pa. Check 7124 opposite last page.)

NEXT MONTH —

The new Merchants Refrigerating Co. frozen food warehouse near St. Louis houses many notable "firsts" in frozen storage.



FOOD PROCESSORS

We will sell this fine, almost new Food Processing building (14,400 sq. ft.) with ample cooler and freezer rooms, tile floors and walls, excellent ventilation, etc., located on seven city lots, near the business center of Joplin, Missouri. *PLUS* four auxiliary buildings, an 1800 ft. deep well with pump, a cooling tower, pipe tunnel and many other desirable features.

For additional information and price, write to

GATEWAY CREAMERY COMPANY

315 E. Seventh St., Joplin, Mo.

When inquiring check 7125 opposite last page

No. 9-18—Capacity: 18 persons
Size: 9'0" x 15" deep x 6'6" high

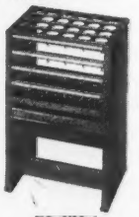
The OFFICE VALET Lockerette TM REG

—Combines the best features of both lockers and coat racks.

Wraps are exposed to air and light. Employees do not face the weather in damp wraps that have been crumpled in dark lockers—do not eat soggy lunches, soaked by wet hats or gloves. Each person has his own spaced coat hanger, ventilated hat shelf and 12" x 12" x 15" deep lock box for lunches, tools and personal effects.

Lockerettes save space too . . . the No. 6-12 (2-column) accommodates 12 people in 6 feet; the No. 9-18 (illustrated) accommodates 18 in 9 feet.

Improves health and morale — lower absenteeism.



NO. UM-4 UMBRELLA RACK

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- Completely factory assembled and fire tested.
- Fully automatic operation.
- 4-pass down draft design.
- Built-in induced draft.
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BULLETIN 783F

for performance you can BANK on SUPERIOR STEAM GENERATORS

SUPERIOR COMBUSTION INDUSTRIES INC.
TIMES TOWER, TIMES SQUARE, NEW YORK 36, N.Y.

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to help make YOUR brand the one they like best

check up on SPRAY NOZZLES

To improve product quality and lower spraying costs, Spraying Systems offers the advantages of advanced design and better performance. Typical applications include mixing, washing, cooling and spray drying. We also offer spray nozzles to meet unusual conditions such as high abrasion or extremely fine atomization.

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3213 Randolph St. • Bellwood, Ill.

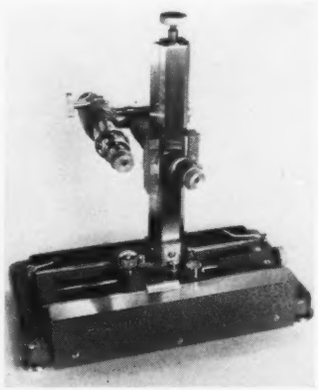
WRITE FOR CATALOG 24 forty-eight pages of complete data on thousands of types and capacities.

ADVANCED SPRAY NOZZLE DESIGN FOR NEW DIMENSIONS IN CONTROL AND PERFORMANCE

When inquiring check 7128 opposite last page

Measuring microscope reads to 0.01 mm

A new measuring microscope reads direct by vernier to 0.01 mm on both the horizontal and vertical scales. The instrument focuses by rack motion and has a 2" achromatic microscope objective, with a full length of 38 mm, as standard equipment. It has a magnification of x33, an object field diameter of 2.0 mm, and a working distance of 45 mm.



Focuses by rack motion, has magnification of x33

(Measuring microscope No. 15340BC is available from The Ealing Corp., Dept. FP, Box 90, Natick, Mass. . . . or check 7129 opposite last page.)

Offers thermostatic control valves

Eight-page condensed catalog contains descriptions and engineering data on supplier's line of shower mixing valves, steam temperature regulators, water controllers, hospital and photographic temperature control assemblies, tempering valves, and other products.

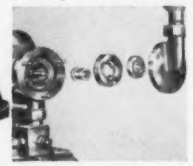
Cat No. C-7 is available from Lawler Automatic Controls Inc., Dept. FP, 455 N. McQueston Pkwy., Mount Vernon, N. Y. When inquiring specify 7130 on form opposite last page.

NEW!

GAULIN RE* COLLOID MILL

This is the Model 2A, shown with accessory equipment — stainless steel 3-way valve, bypass tubing and tank — for processing quantities as small as 8 oz.

The Special PLUS Features of the Gaulin RE*



Exclusive! Removable rotor, stator and shaft seal can be disassembled without tools. Shaft leakage is eliminated.

Special micrometer adjustment, from .001 to .040, positions gap opening between rotor and stator. Adjustment made when running or not.

Here's a brand new concept in Colloid Mills — the Gaulin RE* with removable rotor, stator and shaft seal. The horizontal two-stage design gives maximum capacity per horsepower and unusual processing efficiency.

Special Materials Available
Rotor and stator can be furnished in stainless steel, tungsten carbide, ceramic, alundum and other special materials. Parts are interchangeable.

Wide Range of Capacities
The Gaulin RE* has a capacity range from 0-2600 gph. Model 2A: 0-310 gph; Model 4A: 0-1000 gph; and Model 8A: 0-2,600 — all depending on product, specifications and gap setting.

Send for New Bulletin
Put this new Colloid Mill to work for you! Complete data on the RE* line is available in a special bulletin. Ask for C-56 from: The Manton-Gaulin Mfg. Co., Inc., 59 Garden St., Everett 49, Mass.

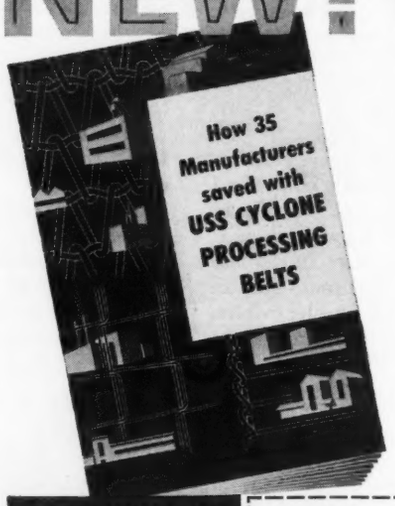
Gaulin MANTON Gaulin

*patent applied for

MANTON-GAULIN MFG. CO., INC.
Everett, Massachusetts

When inquiring check 7131 opposite last page

NEW! FREE!



Learn how 35 manufacturers cut costs by using Cyclone Processing Belts. You'll find the whole story in this brand new, free booklet just off the presses. We've carefully selected thirty-five different cases from our files covering many fields of product processing. Chances are, you'll find an example of cost-cutting that could be applied to your own operation. Take advantage of this opportunity to find out how others slashed production costs with Cyclone Belts. Simply fill in and mail the coupon for your free copy of this informative booklet.

CYCLONE FENCE DEPARTMENT
AMERICAN STEEL & WIRE DIVISION
UNITED STATES STEEL CORPORATION
WAUKEGAN, ILLINOIS

USS CYCLONE METAL CONVEYOR BELTS
SPIRAL WOVEN FLAT WIRE FLEX GRID

USS

Cyclone Fence
Dept. K-17, Waukegan, Illinois
Please send me your FREE Belt Booklet on production line savings.

Name .....
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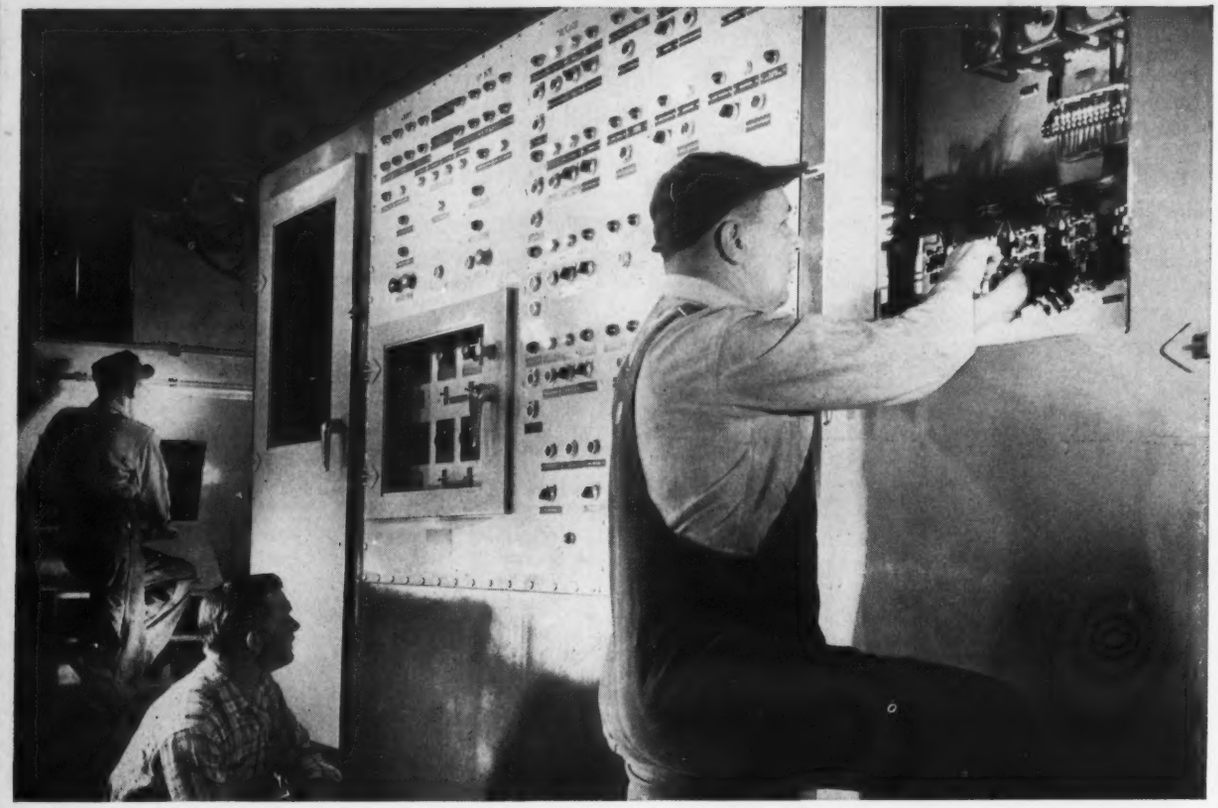
Address .....
City ..... State .....

UNITED STATES STEEL

When inquiring check 7132 opposite last page



Worked to death... to insure the life of your proportioning system

If there's anything worth its weight in gold in a proportioning system control panel, it's *dependability*. Before a single electrical component was designed into this panel being wired at Richardson Scale Co., its prototype had been literally worked to death in a controlled testing operation. It's survival of the fittest . . . and only the fittest is acceptable. Richardson's reputation as a producer of dependable control panels rests, in the last analysis, on the selection of tested components and on intensive and varied experience in applied electronics.

In addition, Richardson supplies each control panel completely wired and pre-tested, invites the customer to familiarize himself with it *before installation* and takes responsibility for complete system operation. Detailed instructions and diagrams are supplied for each job.

But this is only part of the story. The best of control panels will not pinch-hit for a poor automatic weighing unit, mis-applied materials feeding equipment or improper storage bin design. Richardson know-how in this field embraces 50 years of experience in handling over 400 materials.

When it comes to proportioning, you're in good company when you come to Richardson. Look at some of the others who now have *proportioning by Richardson:*

The Firestone Tire & Rubber Company • General Foods Corp. General Electric Company • U. S. Bureau of Mines Reynolds Metals Company • American Rice Milling Co., Inc. Union Carbide & Carbon Corporation • Ford Motor Co. Fleischmann Distilling Corp. • The Flintkote Company Johnson & Johnson • National Distillers Products Corp. Owens-Illinois Glass Co. • Pittsburgh Coke & Chemical Co. Celanese Corp. of America • Goodyear Tire & Rubber Co. E. I. Du Pont de Nemours & Co., Inc. • and many more.

Richardson

MATERIALS HANDLING BY WEIGHT SINCE 1902

RICHARDSON SCALE COMPANY
Clifton, New Jersey

Atlanta • Boston • Buffalo • Chicago • Cincinnati • Detroit Houston • Memphis • Minneapolis • New York • Omaha Philadelphia • Pittsburgh • San Francisco • Wichita • Montreal Toronto • Havana • Mexico City • San Juan

Richardson Scales S.A., Geneva, Switzerland
Richardson Scale, Ltd., Nottingham, England

2392

When inquiring check 7133 opposite last page

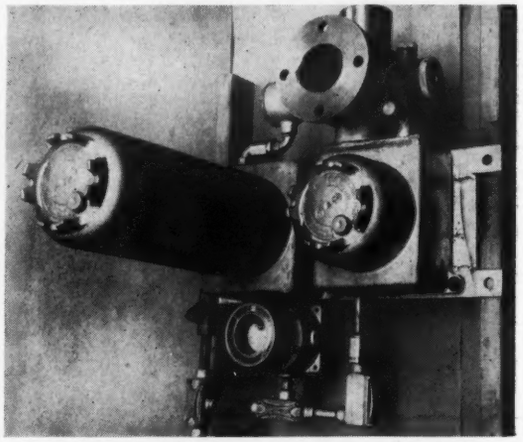
instrumentation & control

Monitors turbidity continuously

Measures suspensions of 0.05 ppm; color changes don't affect readings

Uses: Provides continuous monitoring of turbidity in fluids. Suspension as low as 0.05 ppm of diatomaceous earth in water may be measured, with full scales as high as 250 ppm. The instrument is useful in water treatment, in breweries and where clarity of liquid products is a factor.

Features: The unit is based on a dual beam system whereby light scattered by suspended particles is compared with light transmitted by the fluid. Errors due to common mode effects are reduced by several orders, and drift is non-existent.



Turbidity unit adapts to pipe sizes to three inches and to pressures up to 500 psi

Description: There are two principle separate components: The detector unit and the power unit. The former is housed in an explosion-proof dust-tight fitting. Its cell may be of Monel, stainless steel, aluminum, or other material, adaptable to pipe sizes up to three inches and pressures up to

AUTOMATION AT ITS ZENITH

The new Philadelphia bakery of National Biscuit Co. is operated almost completely by automatic controls. Details of this outstanding installation are covered in this issue beginning on page 24.

500 psi. Power unit may be in an explosion-proof fitting, or a chassis in cabinet, or rack mount. It may be mounted at a distance remote from the detector unit. An output voltage of 0-50 mv is provided for recorder operations.

Sensitivity is 0.05 ppm (diatomaceous earth); maximum ambient temperature is 75°C.

(Turbistat is a development of Kaye Development Co., Subsidiary of Baird Associates, Atomic Instrument Co., Dept. FP, 33 University Road, Cambridge 38, Mass. . . . or for more information check 7134 on the convenient Reader Service slip which is located opposite last page.)

Photoelectric units follow operations at rates up to 600 per minute

Miniaturization of components aids installation of controls

Uses: Provide accurate control in actuation, counting, inspecting, and safeguarding machinery.

Features: Miniaturization of components offers advantages in installation, especially in tight places. Cell unit uses a cadmium sulphite cell of long life and high sensitivity.

Description: Unit will follow operations at up to 600 per minute. It will work either from direct

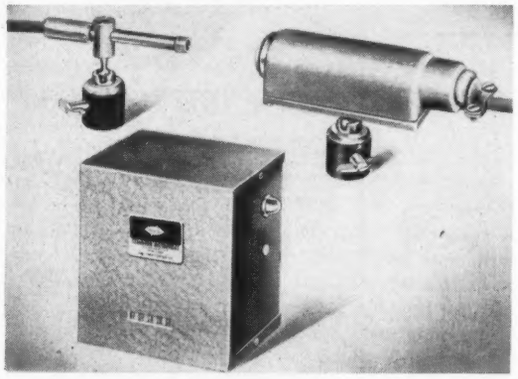
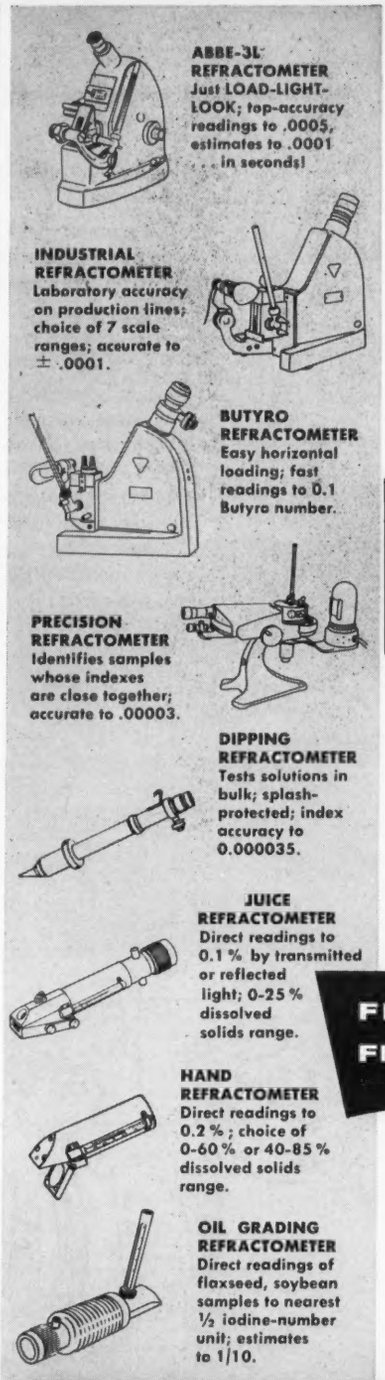


Photo cell, light source, and counter units of photoelectric control

beam or reflection from object being controlled; also from mirror reflection.

Control circuits, signal lights, and counter are housed in heavy steel case, which can be installed in a remote location. Light and cell unit are mounted for ease of installation. Adjustment for sensitivity covers a wide range.

(Robot-Eye controls are available from Standard Instrument Div., Heat-Timer Corp., Dept. FP, 657 Broadway, New York 12, N.Y. . . . or for more information check 7135 on form located opposite last page.)



ABBE-3L REFRACTOMETER
Just LOAD-LIGHT-LOOK; top-accuracy readings to .0005, estimates to .0001 . . . in seconds!

INDUSTRIAL REFRACTOMETER
Laboratory accuracy on production lines; choice of 7 scale ranges; accurate to ± .0001.

BUTYRO REFRACTOMETER
Easy horizontal loading; fast readings to 0.1 Butyro number.

PRECISION REFRACTOMETER
Identifies samples whose indexes are close together; accurate to .00003.

DIPPING REFRACTOMETER
Tests solutions in bulk; splash-protected; index accuracy to 0.000035.

JUICE REFRACTOMETER
Direct readings to 0.1 % by transmitted or reflected light; 0-25 % dissolved solids range.

HAND REFRACTOMETER
Direct readings to 0.2 %; choice of 0-60 % or 40-85 % dissolved solids range.

OIL GRADING REFRACTOMETER
Direct readings of flaxseed, soybean samples to nearest ½ iodine-number unit; estimates to 1/10.

TEST VEGETABLE OILS *this* FASTER, EASIER WAY!

Bausch & Lomb
BUTYRO
Refractometer

- **SPEEDS PRODUCTION!** Horizontal loading saves time and effort. Easy to clean. Faster readings: single eyepiece shows color-compensated dividing line and 0-100 range scale (ND 1.42-1.46).
- **PROTECTS PRODUCT QUALITY!** Accurate to 0.1 Butyro number. Correct readings assured by micrometer drum reading system, constant temperature control circulating system, contamination-proof design, and positive prism-liquid contact.
- **LOWERS CONTROL COSTS!** This low-priced instrument releases expensive full-range units for other jobs. Trouble-free design protects vital parts from heat, dust, fumes, stray liquids . . . ensures minimum maintenance, maximum use.

FILL YOUR QUALITY CONTROL NEEDS FROM INDUSTRY'S MOST COMPLETE LINE

Only the *right* instrument for the specific job can protect quality standards . . . save time . . . cut production costs. Only the complete, top-accuracy Bausch & Lomb line assures you the *right* instrument for *every* job; on-the-spot production line inspection . . . field checks . . . research. Find out now how the *right* B&L instrument makes peak efficiency easy.

MAIL COUPON FOR COMPLETE DATA

BAUSCH & LOMB OPTICAL CO.
60613 St. Paul Street, Rochester 2, N. Y.

Send me complete data on the following B&L Refractometers:

☐ Abbe-3L ☐ Precision ☐ Butyro ☐ Industrial
☐ Dipping ☐ Juice ☐ Hand ☐ Oil Grading
☐ I would like a demonstration of the B&L Refractometers checked above.

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COMPANY.....
ADDRESS.....
CITY..... ZONE..... STATE.....

BAUSCH & LOMB
SINCE B&L 1853

America's only complete optical source . . . from glass to finished product.

When inquiring check 7136 opposite last page

Emery NEWS

WEIGHING SYSTEM

BIN, TANK AND HOPPER EDITION No. 3

EMERY CELLS USE HEISE GAUGES FOR MAXIMUM OPERATING ACCURACY

More than 100 years ago, Eugene Bourdon, of Paris, discovered that tubes of non-circular cross section permanently bent in the form of a semi-circle, tend to unbend if subjected to internal fluid pressures. Such tubes have become known as Bourdon tubes. Fig. 1.

The Heise Bourdon Tube Company, Inc., Newtown, Conn., has been developing and manufacturing these gauges for more than 25 years and has earned a world-wide reputation for precision workmanship and precision accuracy.

We were the first to use these Heise gauges in our testing machine work and we have continued to apply them to the present Emery Weighing Systems. Fig. 2.

In remote indication applications, specially installed Emery indicators have proven satisfactory for distances up to 125 feet. The quick response of these indicators is due to the relative incompressibility of the hydraulic fluid in the system. The cell will automatically compensate for any volumetric changes in the weighing system without sacrificing accuracy. Pressure from the Emery Cell to a suitable indicator, recorder or controller is carried through ⅛" copper tubing.

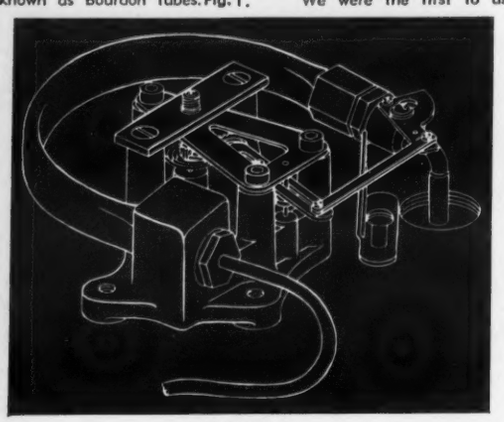


FIGURE 1

FIGURE 2

SIMPLEST APPLICATION OF EMERY WEIGHING SYSTEM INVOLVES ONE CELL AND APPRIOPRIATE INSTRUMENTATION

TANK, BIN OR HOPPER MAY BE SUPPORTED OR SUSPENDED

The tank shown in Fig. 3 is one of the simplest arrangements of an Emery Weighing System utilizing the new "Rolling Ball" Load Cell. It consists of one Emery Cell to support the front end of the tank and two Emery Ball Pivot Assemblies or some other support such as an "I" beam for the back of the tank.

The hydraulic pressure in the cell actuates an indicator, recorder or controller which is so calibrated that it reads directly the weight of the tank contents.

The basis for the arrangement of the tank shown in Fig. 4 lies in the use of a compression cell and a carrying structure to seat the load directly on the cell.

The alternate arrangement, shown in dotted line, involves the use of a tension cell supported from the floor above with the weight of the tank suspended on a rod which would go directly through the cell.

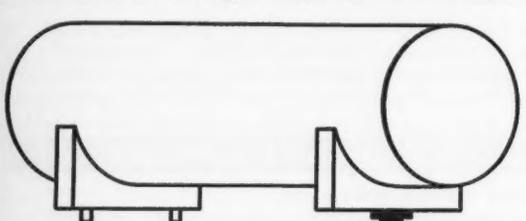


FIGURE 3

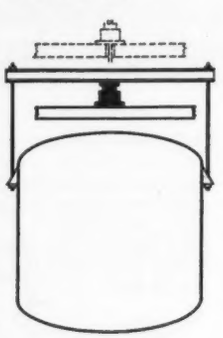


FIGURE 4

NOTICE

These are but three of the fifteen different arrangements discussed in detail in our new Bulletin 561. If you have not yet received a copy, be sure to write today or check the proper number on the Readers' Service Card in this publication. We will be happy to send you a copy by return mail.

PRECISION SINCE 1872

THE A. H. EMERY COMPANY

Pine Street • New Canaan, Conn.

When inquiring check 7137 opposite last page

instrumentation

Uses cloth swab on end of rod to clean gage glasses

Uses: Cleaning inside of liquid level gage glasses of dirt and stains.

Cloth swab cleans sight glass

Features: Cleaning rod applies pressure to swab on end of rod for more efficient cleaning.

Description: Gage glass cleaning rod uses a cloth swab at end of rod which can be brought to bear against inside of gage glass. Tubular cloth swab is slipped over piece of corrosion-resistant spring steel. Detergent or other cleaning agent is applied to swab and rod is inserted into end connection of gage. When swab is visible through glass, handle is pulled back and thumb screw is tightened. Standard length is 36", although longer lengths are available.

(Cleaning Rods are product of Jerguson Gage & Valve Co., Dept. FP, 80 Fellsway, Somerville 45, Mass. . . . or for more information check 7138 on form opposite last page.)

"AND HERE AT BUTTERCUP FARM WE SEE THE FACES OF THOSE CONTENTED COWS..."

Highly accurate

MOISTURE ANALYSIS

in a few minutes

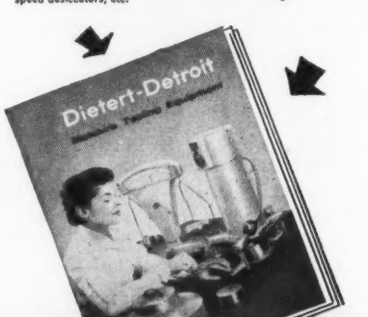
DIETERT-DETROIT MOISTURE TELLERS

Quickly determine the amount of moisture in any material . . . solid granular, liquid or semi-liquid. Control raw material costs. Control quality and costs in the processing of foodstuffs, fibres, tobacco, chemicals, soaps, and many other materials. Easily operated without involved computations!

12 PAGE CATALOG

CATALOG NUMBER SL-1 sent without obligation. Lists various models to suit material to be tested for moisture. Includes data on Dietert-Detroit drying ovens, speed desiccators, etc.

on request



HARRY W. DIETERT CO.

CONTROL EQUIPMENT

9330 ROSELAWN DETROIT 4, MICH.

Send me Moisture Testing Catalog SL-1

NAME_____

COMPANY_____

ADDRESS_____

CITY_____ STATE_____

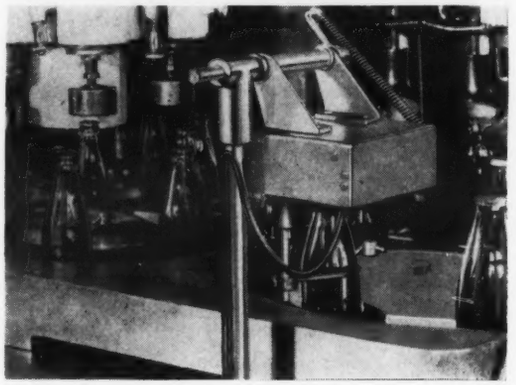
When inquiring check 7139 opposite last page

Electronic cap detector . . .

assures crowning after filling

Uses: Detects uncapped bottles of foods, fruit juices, brewing, soft-drinks.

Features: Electronic cap detector is adjustable for practically all sizes and shapes of capped bottles. It operates at inspection speeds of up to 410 bottle/min. Danger of damage to associated equipment is minimized because early warning of cap jam is provided. Filling machine stoppages are reduced to a minimum, and filling machine operator is relieved of crowning operation inspection. Only one moving part is required, a contact arm that touches bottles at a safe distance from the neck to avoid tipping, breakage, and product contamination.



Uncrowned bottles detected electronically

Description: Equipment has a built-in "memory" circuit which sounds an alarm bell upon detection of an uncrowned bottle. The line keeps running and, if more uncrowned bottles are detected in a four-second interval, filling machine is automatically shut off. Detector can be installed on any type of bottling equipment and will inspect 6-, 10-, 12-, and 32-ounce bottles. Sensing device measures 6½x4¼x2½" and weighs 7½ lbs. It mounts on the outfeed of the crowning machine.

(Electronic crown detector is manufactured by the Radio Corporation of America, Dept. FP, RCA Building, 30 Rockefeller Plaza, New York 20, N.Y. . . . or for more information check 7140 on form opposite last page.)

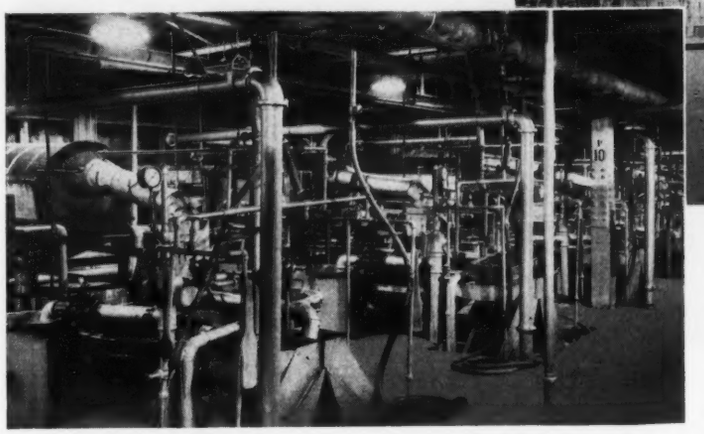
NEXT MONTH —

An easy-to-use jig makes it possible to set up multiple unit packages for test marketing purposes. One girl can turn out about ten packs/minute. Details will be found in the February issue.

Seabrook minds its PeaS and QualitieS with Taylor Quality Grader Controls

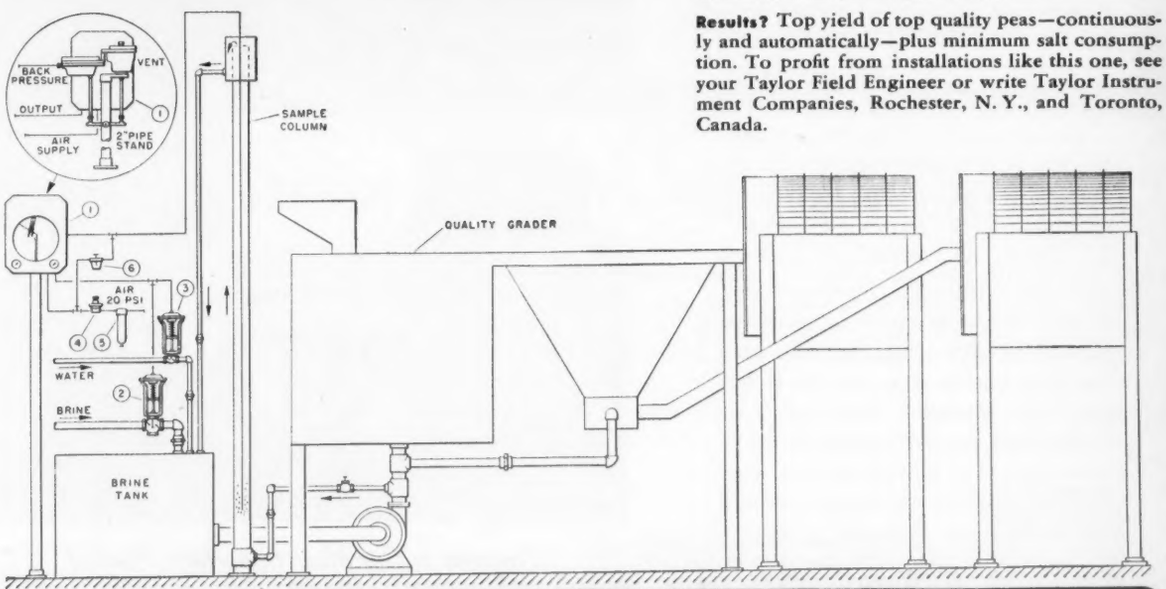
Better Peas cheaper—that's what Taylor's Brine Density Control System means to Seabrook Farms Co., Bridgeton, N. J. Nationally known for growing the fine foods it processes and markets, Seabrook relies on Taylor to get top quality pea grading. This is done efficiently and economically by the flotation principle.

Taylor High Accuracy Mercury Manometers measure brine density in Sight Feed Bubblers. Any density change in the grader is quickly detected—the Recording Controller then opens brine or water valves to return it to the correct value.



Completely automatic control results from use of two throttling type control valves on the brine and water lines—both operated by the same Controller but so staggered that only one opens at a time. Thus density can be diluted as well as increased as required by a simple set point adjustment.

Results? Top yield of top quality peas—continuously and automatically—plus minimum salt consumption. To profit from installations like this one, see your Taylor Field Engineer or write Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada.



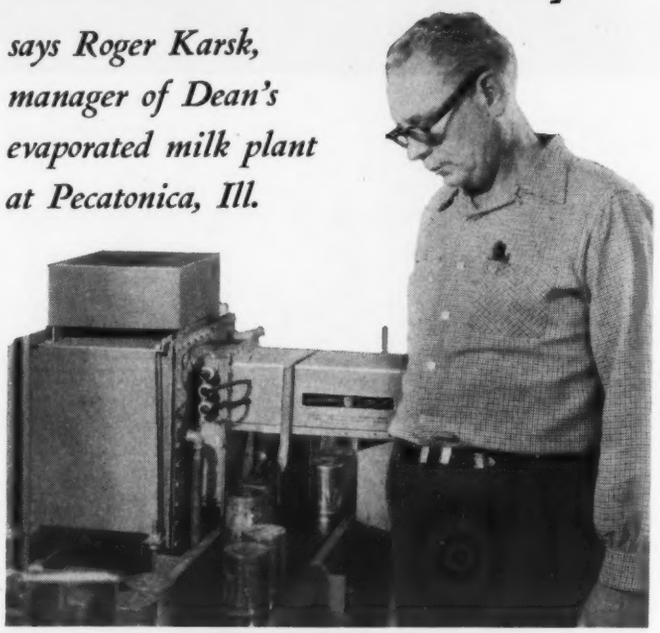
Taylor Instruments **MEAN ACCURACY FIRST**

When inquiring check 7141 opposite last page

HYTAFILL® x-ray monitor / *a proved G.E. X-Ray product to make your products better*

"Doubled our production efficiency!"

says Roger Karsk, manager of Dean's evaporated milk plant at Pecatonica, Ill.



TO provide full measure for their customers, as well as to meet strict FDA requirements, Dean Milk Co. chose General Electric HYTAFILL to prevent underfill on their evaporated milk canning line at Pecatonica, Ill.

They are elated at its precise, automatic rejection of underfills even when inspecting 300 cans per minute. Their experience proves "HYTAFILL 100% better" than the inspection method formerly used.

If you're packaging liquids or free-flowing solids in opaque containers, HYTAFILL gives you 1/32" (±1/64") accuracy of inspection — at rates up to 900 containers per minute. Your G-E x-ray representative can show you how it can be easily adapted to existing conveyor lines. Or write to X-Ray Department, General Electric Company, Milwaukee 1, Wisconsin, for Pub. BC-14.

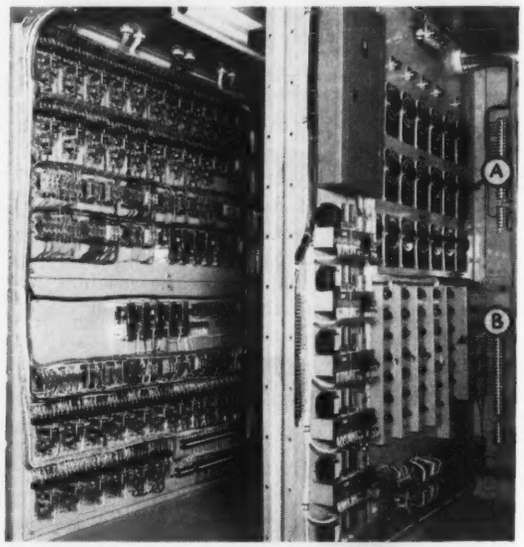
Progress Is Our Most Important Product

GENERAL ELECTRIC

When inquiring check 7142 opposite last page

Pushbutton Weighing

(*Continued from page 26*)



Rear view of part of master console panel. Weight adjustment and calibration indicated by Arrow A; Arrow B indicates weight selector

mixer station by setting of a dial.

3. Operator pushes start button.
4. Feeding light goes on, indicating that sugar is being conveyed to scale. When correct weight (see below) is reached, there is a short time delay followed by an automatic weight check. If underweight or overweight, corresponding signal light flashes on the master console and discharge of scale is held up. Operator either decides that the underweight or overweight is acceptable and over-rides the automatic control by a manual switch, or else he adjusts the weight by manual controls. Excess sugar can be drawn off to the overweight drawoff.
5. If weight is within tolerance (the usual condition), sugar is discharged and the discharge light goes on. As soon as discharge from the Polyplane is complete, the completion of delivery is signaled by lighting of "sugar" on the ingredient list at both the mixer and the master console.

Weight Indicators on Panel: Each scale has a weight indicator dial on the master console, enabling operator to check the weighing operation at any time. (On the photo of the master console these indicator dials are the "circles" at the operator's eye level.)

In addition, whenever the operator desires to check the final weight from the automatic weighing, he presses a "hold" button; then discharge of the weighed batch will not be made until he presses a "discharge" button.

Weight called for by a formula is set in advance of

the weighing operation on a weight selector dial behind the console panel (A of the accompanying photo.) Below the weight selector dials (B) are the corresponding compensator controls by which the operator makes adjustments in the shutoff point for a given weight selected. Weight selectors are mounted inside the panel to prevent formula changes except when authorized. The system at Nabisco has provision for dialing of three weights.

Precision (reproducibility) of the weighing is plus or minus 0.1% of scale range. Range in pounds of the various scales is as follows: Sugar 700, flour 1200, water 500, shortening 500, molasses 600, invert syrup 500.

Amount of underweight and overweight which will hold up further action and sound an alarm as previously described in step 4, is also adjustable from plus or minus 1 dial graduation to plus or minus 15 dial graduations, which represents an adjustable tolerance from zero to plus or minus 1½% scale range.

Scales for liquids weigh-out: For the dry ingredients, a weighing-in system is employed; that is, weight selected is weighed on to a scale, then discharged. For the liquid ingredients, a weighing-out system is used. In this case the tank on the scale is full at the start of the weighing operation (zero balance condition) and the loss in weight is measured as the liquid is discharged.

Temperature of water weighed by the scales is controlled by valves on inlet lines from ice water, city water, and hot water supply lines as indicated in the flow diagram. At the beginning of the operation, operator will run water from the mixing manifold to an overflow until the desired temperature is attained.

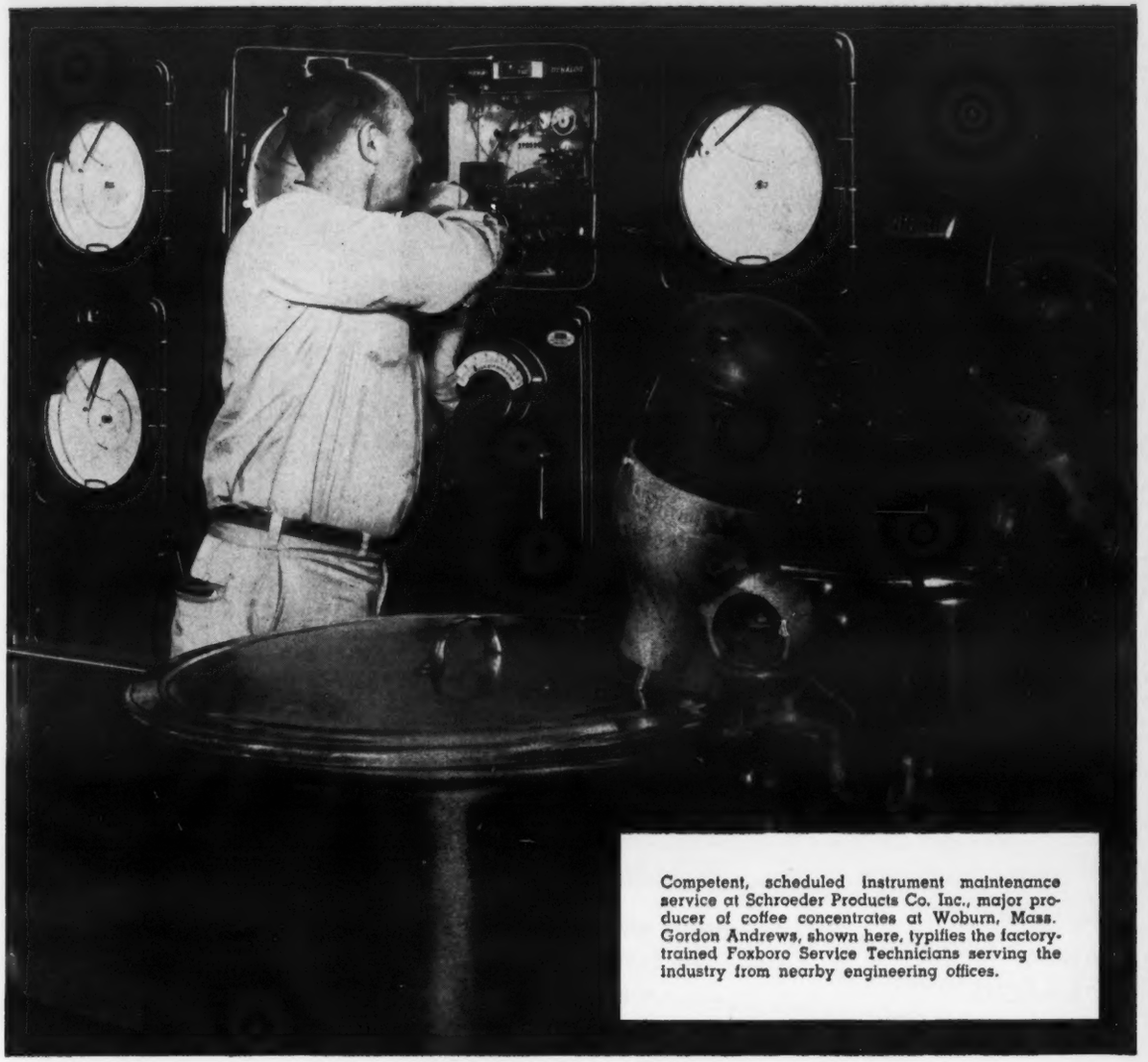
At the top of the master console panel (see photo) are 140 trouble lights, each one connected to a separate possible trouble area. Thus, if a conveyor or feeder becomes overloaded, the weighing operation is stopped automatically, and the source of the trouble is indicated by a light.

All scale controls include a manual circuit providing a means to bypass automatic operation and cut in a manual feed and discharge control.

("Select-O-Weigh" automatic weighing scales were designed and built by Richardson Scale Co., Dept. FP, Clifton, N. J. Check 7143 opposite last page.)

don't look now —

. . . but there is a message for VIPs only on page 59



Competent, scheduled instrument maintenance service at Schroeder Products Co. Inc., major producer of coffee concentrates at Woburn, Mass. Gordon Andrews, shown here, typifies the factory-trained Foxboro Service Technicians serving the industry from nearby engineering offices.

Scheduled Service that saves you costly shutdowns!

There's no better way to avoid costly shutdowns, *during vital production seasons or year-round operations,* than by keeping your Foxboro Instruments and control systems running at peak efficiency. And the simplest, most economical way to do it is with a Foxboro Scheduled Service Agreement.

Under this plan, a Foxboro Service Technician will call at your plant at regular, specified intervals to maintain, clean, and service your Foxboro Instruments. You'll not only be served by competent, factory-trained personnel, using genuine Foxboro parts and methods; you'll also save substantially over non-contract service. Supervision of instrument installation is also available where needed.

Don't wait until you're in trouble when it's so easy to prevent it. Let us recommend a preventive maintenance schedule for your plant now. Ask your Foxboro Field Engineer, or write for information. The Foxboro Company, 921 Neponset Avenue, Foxboro, Mass., U.S.A.

FOXBORO
REG. U S. PAT OFF.

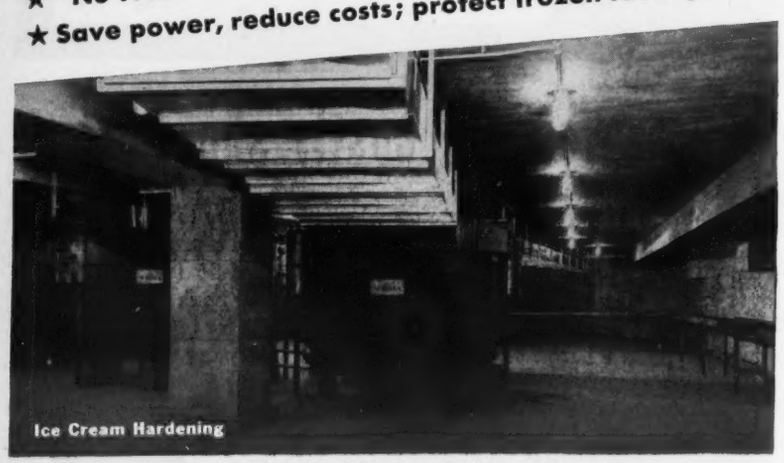
SCHEDULED MAINTENANCE SERVICE

When inquiring check 7144 opposite last page

NIAGARA "NO FROST"

25 Years' Successful Experience

★ Always full capacity refrigeration and freezing.
★ "No Frost" removes moisture as fast as it condenses.
★ Save power, reduce costs; protect frozen food quality.



Write for Niagara Bulletin 105

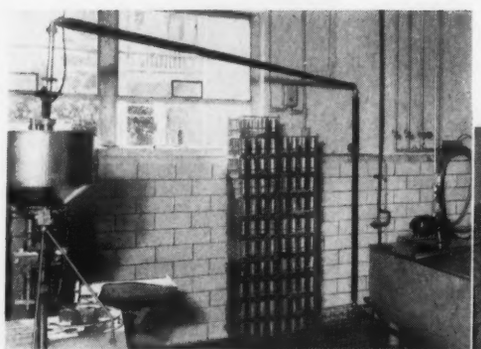
NIAGARA BLOWER COMPANY

Dept. F.P., 405 Lexington Ave. New York 17, N. Y.

District Engineers in Principal Cities of U. S. and Canada

When inquiring check 7145 opposite last page

FOAMED PLASTIC I



Liquids are moved from holding tank (photo above) through pipe insulated with foamed plastic material to filler at New England dairy plant. To comply with sanitation regulations, pipe and insulation (as one unit) are sterilized daily in a hot water and detergent bath (shown at right)

Two new forms of a foamed plastic material have been developed for use in insulation. Originally it was available only for insulating piping systems. Now available are flexible sheets for insulating kettles, tanks, other irregular shaped vessels; and a rigid board for use in erecting refrigeration rooms. Although basically made from the same plastic, modifications have been made to manufacture the insulation in the three forms.

Insulation's lightweight, odorless, and non-staining characteristics have already attracted the attention of many food processors. The material is a closed-cell foam, highly resistant to the passage of vapors and air.

Armalite rigid board can be used at temperatures from —50 to 160°F, although its

Insulating a wall with rigid foamed plastic board by cold erection method. Hardwood skewers or galvanized nails supply additional support

C INSULATION

- *as rigid boards*
- *in flexible sheets*
- *to slip-on pipes*

main purpose is to insulate refrigerated areas. It has a k factor of 0.24 at 60°F mean temperature; an average modulus of rupture of 24 lb/sq in. In place, the boards do not swell, warp, buckle, or show appreciable shrinkage. Average density is 1.25 lb/cu ft. Breakage in handling and application is negligible, and edges stay sharp.

Armalite is applied by the cold erection method with an approved insulation adhesive. Among its inherent characteristics is a resilience or "springiness" that allows tight construction. Cutting and fitting can be done quickly and accurately with a saw or knife.

The insulation boards are made in 12 x 36″ size for cold room installation and in 36 x 36″ size for insulating refrigerated equipment, truck, and trailer bodies. Material is available in 2, 3, and 4″ thicknesses.

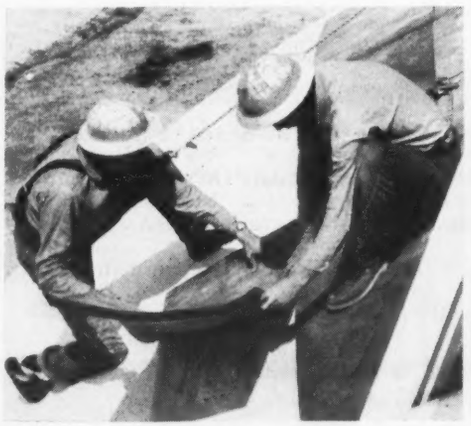
Armaflex sheet insulation has a high temperature limitation of 160°F. There is no practical low limitation, as the flexible sheets can be applied in successive layers. Its thermal conductivity is 0.28 at 75°F. No vapor barrier is needed.

Sheets are applied with an insulation adhesive to any clean, dry surface of kettles or tanks. Outdoor installations require an exterior finish to coat the sheets. Sheet dimensions are 30 x 36″ and ½ or ¾″ thick.

Armaflex pipe insulation is designed to handle products with temperatures from 32 to 200°F. It has the same conductivity rating as the sheet form. A ½″ thickness will prevent condensation under normal operating conditions. As with the other two forms, this type has a "built-in" vapor barrier.

If pipe lines are already connected and tested, the insulation can be slit longitudinally, slipped on the pipe, and the slit sealed with an insulation adhesive. Insulation comes in 6 ft lengths in ½ and ⅜″ wall thicknesses to fit standard pipe sizes up to 3⅛″ OD for the ½″, 1⅜″ OD for the ⅜″.

(Armaflex and Armalite insulations are products of Insulation Div., Armstrong Cork Co., Dept. FP, 1010 Concord St., Lancaster, Pa. . . . or for more information check 7146 on form which is located opposite last page.)



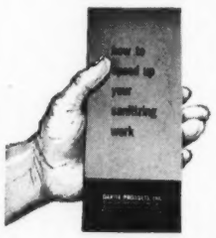
Flat, flexible sheets of foamed plastic insulation require little or no cutting or fitting when applied to irregular surfaces of tanks or vats

Foamed plastic insulation can be installed when pipe system is in place. It is snapped on lines and permanently sealed

you've got low-cost sanitation right in the palm of your hand

No bigger than a pipe bowl, yet the Hozon Unit does a mammoth job of helping to deliver low-cost spray sanitation. This unit, hooked up with an ordinary garden hose, permits regulated amounts of Oakite Bactericide to be sprayed from the hose nozzle. Makes sanitizing walls, floors, equipment—all areas—as simple as watering a lawn.

No higher than a hill of beans, yet this tiny amount of Oakite Bactericide is sufficient to make up a 10 gallon, 100 ppm solution of the best sanitizing agent available. It's Oakite Bactericide . . . with its near neutral pH that permits bug killing within 5 seconds after application. It's Oakite Bactericide . . . that mixes quickly, drains freely, and leaves no films or streaks.



No bulkier than a time-table, yet this handy descriptive folder is chock full of facts on how Bactericide and the Hozon Unit team up to drive spoilage out of your plant. It gives complete details on how the Oakite Hozon Unit works, how solutions are made up, where to use it.

No costlier than a stick of chewing gum. The amount of Bactericide to make up that 10 gallon solution costs *less than one cent.* And here's the big news. The Hozon Unit is FREE to users of Oakite Bactericide and the folder is FREE on request. Write today for the full story on how you have low-cost sanitation . . . right in the palm of your hand. Oakite Products Inc., 26G Rector Street, New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING

OAKITE

MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U.S. & Canada

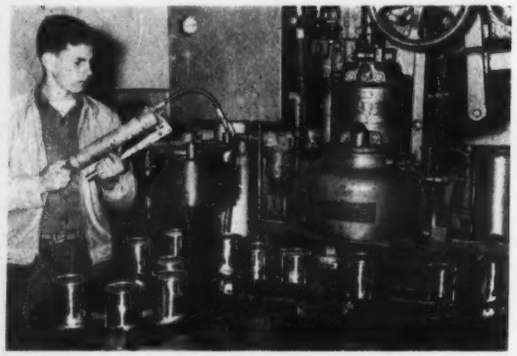
When inquiring check 7147 opposite last page

Plant equipment lubricants resist 100 corrosive agents

Prevent leakage, preserve packings, protect floors; operating temperatures to 350°F

Uses: For acid, alkali-resistant service in lubricating food processing plant bearings, drive chains, pump packing glands, and plug valves.

Features: Provides protection against more than 100 corrosive agents and solvents.



Applying acid, alkali-resistant grease to high-speed canning machine

Description: Three types of lubricants are included in this selection, offered for corrosion-resistant service. They cover temperatures from 0 to 350°F; have smooth non-fibrous body. They are made in four consistencies and have an ASTM penetration range of 200 to 350. Packed in 1 and 7 lb cans and in 25 lb pails, 75 lb kegs, and 400 lb drums.

(Keystone 5P lubricants are made by Keystone Lubricating Co., Dept. FP, 3100 N. 21st St., Philadelphia 32, Pa. . . . or check 7148 opp. last page.)

Suggests coordinated sanitation program for dairies

Dairy sanitation materials and equipment for planning a coordinated program are discussed in 16-page booklet. Topics accompanied by illustrations are on the following subjects: in-place cleaning, milk can conditioning, conveyor chain lubrication, bottle washing, bacteria destruction, milkstone removal, and equipment sanitation. There is also a section on mechanized cleaning.

"A Coordinated Sanitation Program for Dairies" is published by Oakite Products, Inc., Dept. FP, 127A Rector St., New York 6, N.Y. When inquiring specify 7149 on form which is located opposite last page.

Production of popular pipe insulation has been increased 150% so that —

Now EVERYONE

G-B SNAP*ON DISTRIBUTORS

ALBUQUERQUE, Mt. States Insulation Co.
AMARILLO, Ball Distributing & Engr. Co.
APPLETON, J. D. Wilson Co.
ATLANTA, Ga., Southern States Iron Roofing Co.
BILLINGS, Mont., L. W. Worthington
BIRMINGHAM, Ala., Shook & Fletcher Supply
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BROOKLINE, Mass., Homans-Kohler, Inc.
BUFFALO, Frontier Insulation & Supply Co.
CHARLESTON, W. Va., Baldwin Asbestos Products Co.
CHARLESTON HEIGHTS, S. C., Stafford Insulation Co.
CHARLOTTE, N. C., Guy M. Beaty & Co.
CHATTANOOGA, Guy M. Beaty & Co.
CHICAGO, E. C. Carlson Co.
CINCINNATI, R. E. Kramig & Co.
CLEVELAND, The Miles Materials Co.
COLUMBIA, S. C., Southern States Iron Roofing Co.
COLUMBUS, Santeler Brothers
DALLAS, Insulation Supply Co., Inc.
DAVENPORT, Republic Electric Co.
DENVER, Gene Wright Lumber Co.
DETROIT, Coon-DeVisser Co.
EL PASO, Insulation & Specialties Co.
FARGO, N. D., Smith, Inc.
FT. SMITH, Ark., Gunn Distributing Co.
FT. WAYNE, Ind., M. H. Hilt, Inc.
FT. WORTH, The Bracken Co.
GREENSBORO, N. C., Starr Davis Co., Inc.
GULFPORT, Miss., Paine Supply Co.
HOUSTON, Precision Insulation Co.
INDIANAPOLIS, Central Supply Co.
IRON MOUNTAIN, Mich., Champion, Inc.
JACKSON, Miss., Paine Refrigeration Supply Co.
JOPLIN, Mo., Joplin Cement Co.
KANSAS CITY, Kelley Asbestos Co.
LITTLE ROCK, Gunn Distributing Co.
LOS ANGELES, Western Fibrous Glass Products
Plant Insulation Co.
LOUISVILLE, General Insulation & Roofing Co.
MADISON, Wis., J. D. Wilson Co.
MEMPHIS, John A. Denie's Sons Co.
MIAMI, Southern States Iron Roofing Co.
MILWAUKEE, J. D. Wilson Co.
MINNEAPOLIS, Asbestos Products, Inc.
MOBILE, Ala., Shook & Fletcher
NASHVILLE, Southern States Iron Roofing Co.
NEWARK, N. J., Eastern Steam Specialty Co.
NEW HAVEN, Conn., Insulation Supply Co.
NEW ORLEANS, Eagle Asbestos & Packing
NEW YORK, Eastern Steam Specialty Co.
OKLAHOMA CITY, Ball Distributing & Engineering Co.
OMAHA, Cardinal Supply & Mfg. Co.
PHILADELPHIA, John F. Scanlan, Inc.
PITTSBURGH, Dravo Corp.
PHOENIX, Ariz., Kircher Asbestos & Rubber Co.
RALEIGH, N. C., Southern States Iron Roofing Co.
RICHMOND, Va., Southern States Iron Roofing Co.
ROCKFORD, Ill., Mott Brothers Co.
SALT LAKE CITY, Bullough Asbestos Supply Co.
SAN ANTONIO, The Bracken Co.
SAN DIEGO, Western Fibrous Glass Products
SAN FRANCISCO, Western Fibrous Glass Products
SAVANNAH, Ga., Southern States Iron Roofing Co.
SCHENECTADY, N. Y., Jon Tree Sales & Supply Co.
SEATTLE, Western Fibrous Glass Products
ST. LOUIS, A. G. Brauer Supply Co.
ST. PAUL, Asbestos Products, Inc.
SYRACUSE, N. Y., Industrial Supply Co.
TAMPA, Fla., Eagle Roofing & Art Metal Works, Inc.
TALLAHASSEE, Fla., Capital Refrigeration & Supply
TULSA, Okla., Ball Distributing & Engr. Co.
TUPELO, Miss., Paine Supply Co.
WASHINGTON, Walter E. Campbell Co., Inc.
WICHITA, Jamar-Olmen Construction Co.
VANCOUVER, B. C., Fleck Brothers Limited

GUSTIN gb BACON

SNAP*ON . . . THE ONE AND ONLY ONE-PIECE MOLDED PIPE INSULATION OF FINE GLASS FIBERS

Sensational demand has kept Snap*On in short supply ever since its introduction several years ago — but now *everyone* can get Snap*On! To meet the ever-growing demand for this new lightweight insulation that "just snaps on the pipe", we recently made a substantial addition to its production facilities to increase Snap*On production by 150%. These new facilities are turning out the same beautifully uniform one-piece sections that have won such amazing acceptance throughout industry. Here, in a nutshell, is why Snap*On is the *standard specification* in so many industries:

Highest thermal efficiency of any pipe insulating material on the market in its temperature range.

Lower applied cost — just spread the single seam and it snaps on the pipe.

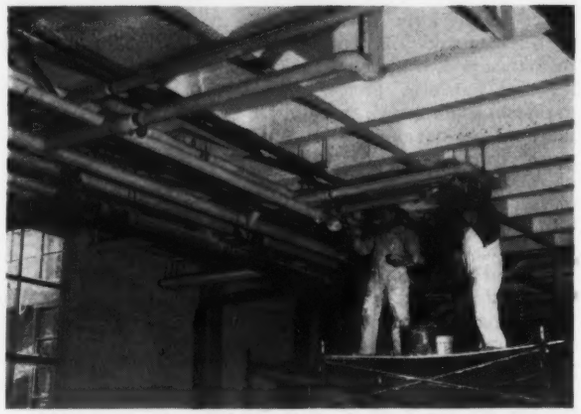
Extremely light weight . . . virtually immune to damage or breakage . . . permanent as glass itself.

So figure Snap*On in all your plans for dual-temperature, cold or heated piping where temperatures do not exceed 350° F. Whether on straight runs, on nested or tracer lines, or at flanges, valves and fittings, Snap*On's flexibility will save you time and money. It's available *now* . . . in sizes from ½" to 33" IPS from your local Snap*On distributor. His name is listed in the column at left. Call him now or—

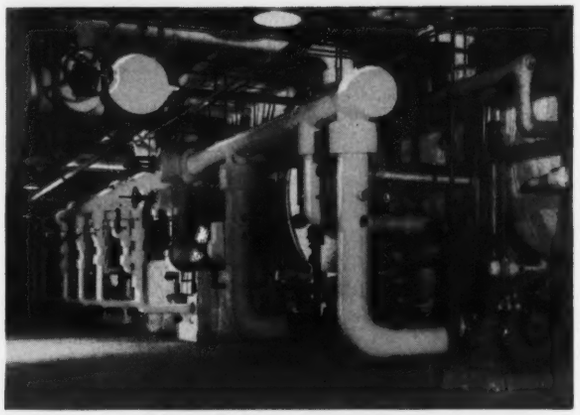
WRITE FOR NEW 8-PAGE SNAP*ON BROCHURE

*Trademark Reg.

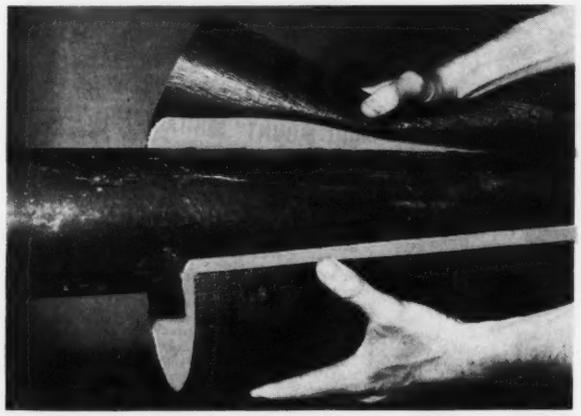
can get SNAP*ON!



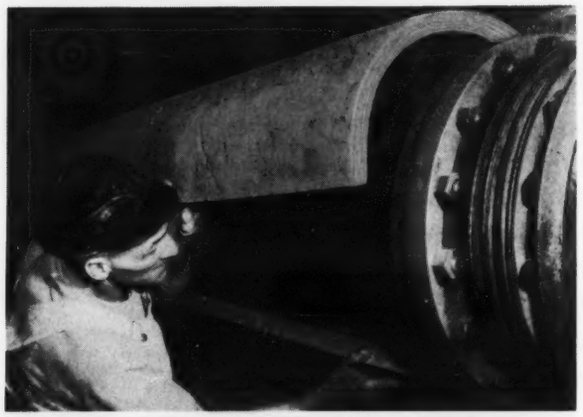
SNAP*ON . . . FOR LOW PRESSURE STEAM AND HOT WATER. For smaller lines carrying hot water or low pressure steam at temperatures up to 250°, ½" thick Snap*On is thermally superior to thicker insulations and far easier to install. Despite its light weight, its tough, resilient structure resists mechanical abuse. Snap*On *cannot* shrink and is not affected by moisture.



SNAP*ON . . . FOR SERVICES TO 350° F. In wall thicknesses from ¾" to 3" Snap*On is an ideal pipe insulation for industrial processing plants and for commercial and institutional buildings, both from the standpoint of initial cost and long-range heat savings. It is available plain, or canvas jacketed, in sizes from ½" to 33" IPS.



SNAP*ON . . . FOR DUAL-TEMPERATURE AND COLD PIPING. For such service, Snap*On is available with a wide variety of factory-applied jackets that solve every problem involving appearance, vapor resistance and fire resistance. All jacketed Snap*On comes in easy-to-handle, easy-to-apply 3′ sections.



SNAP*ON . . . FOR BIG PIPING, INDOORS OR OUT. Just one easy spread-and-snap motion of the single seam—and 6 feet of 16" pipe is insulated! Fewer seams mean faster application, and far greater thermal efficiency. Plain Snap*On is available in these 6-ft. sections in sizes from 6" - 33". For outdoor use, it can also be supplied with factory-adhered weatherproofed jackets.

GUSTIN-BACON *Manufacturing Company* GUSTIN gb BACON

Thermal and acoustical glass fiber insulations • Pipe couplings and fittings • Molded glass fiber pipe insulation

250 W. 10th St., Kansas City, Mo.

When inquiring check 7150 opposite last page

Plant-wide pipe identification easy with adhesive code markers

Made with all-temperature impregnated vinyl cloth mounted on handy dispenser cards

Complete systems for accurately identifying all plant piping can be easily developed by use of quickly applied code markers. Extensive stock selection provides markers for pipes carrying hot, cold water, steam, compressed air, instrument air, gas, chlorine, brine, and ammonia.

Stock sizes fit any pipe size. They are made of all-temperature vinyl cloth and utilize a heavy-duty, all-temperature adhesive (adhesion strength 32 oz per inch of width). Each marker is protected with silicone plastic overcoating, which sheds dirt, grease, and moisture.

Bold, black letters on ASA Standard A-13 background colors identify pipe contents with both color and legend. Eight standard colors used are: red, yellow, green, blue, purple, white, aluminum, and orange.

Mounting on card dispensers assures easy application without distortion. Directional arrows are offered in various colors. Markers in special sizes as well as special insignia and colors are also available.

(All-temperature Perma-Code pipe markers are made by W. H. Brady Co., Dept. FP, 727 W. Glendale Ave., Milwaukee 9, Wis. . . . or for more information check 7151 on form opposite last page.)

Seamless stainless steel fittings covered in 6-page folder

Seamless welded fittings in carbon, alloy, and stainless steels, and flanges in forged steel are described in detail in illustrated 6-page folder. Features of various types, plus table of available construction materials for these types, are included.

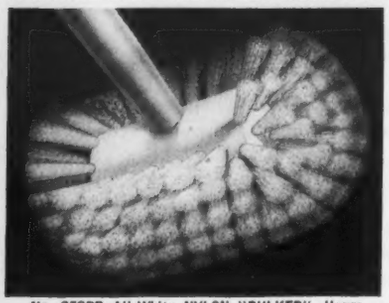
Bul FB-502 is issued by Tubular Products Div., Babcock & Wilcox Co., Dept. FP, Beaver Falls, Pa. When inquiring specify 7152 on form opposite last page.

don't look now —

. . . but there is a message for VIPs only

on page 59

Better Brushes Mean Better Sanitation



No. 358RB All-White NYLON "BULKER". Heavy, hefty tufts of stiff duPont nylon. Special "hi-flare" end tuft design provides complete circle of working bristles.

Easier, Quicker Cleaning for Food Plants

Will Outwear Up To Several Doz. Fiber Brushes

SPARTA WHITE NYLON **BRUSHES**

For Vats, Kettles, Bins, Conveyors, Fillers, Tanks, Shutes, Tables

***"Exclusive"* INDESTRUCTIBLE WHITE PLASTIC WATERPROOF BLOCKS**

No. 45 "HERCULES" All-White NYLON CLEAN-UP. The brush sensation of the year. No other brush can match it for scrubbing-power, balanced contour grip, and almost unbelievable long life. Heavily packed with thick tufts of white crimped nylon.

SPARTA BRUSH CO. INC. SPARTA, WIS.

When inquiring check 7153 opposite last page

Liquid-Tight PIONEER Gloves For Every Food Processing Job

A B C D

A. Whitecap White All Neoprene . . . . 3 sizes, 10½" length, light wgt.
B. Stanflex Blue Plastic Coated Jersey . . . Full and Palm-Coat, 3 styles
C. Stanflex Knit-Lined Red Plastic . . 4 sizes, 11" length, medium wgt.
D. Sheergrip Natural Latex Rubber . . . 9 sizes, 3 lengths, sheer wgt.

Mail This Coupon Today

The PIONEER Rubber Co.
222 Tiffin Road
Willard, Ohio, U.S.A.

N-30
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Pioneers in Hand Protection — For Over 35 Years

Please send me:
- ☐ The name of my nearest PIONEER Glove Distributor.
- ☐ 1956-57 PIONEER Industrial Glove Catalog.
- ☐ Hand Protection Clinic glove recommendation for job described in enclosed letter.

Firm _____
Address _____
City _____ Zone ___ State _____
Signed _____

When inquiring check 7154 opposite last page

Coating prevents damage to floors caused by acids, chemicals, solvents, or water

Uses: Combating floor deterioration in food plants.

Features: Coating is claimed to be more resistant to acids, oils, solvents, and water than any present material. It provides a hard, non-porous surface on clean and dry concrete, brick, or wood. Compressive strength is 8930 psi. Tabor abrader wear factor is 101.0.

Description: Material is delivered in a unit form which includes basic resin, setting liquid, and aggregates. Resin is a polymeric thermosetting liquid. Floor may be used 24 hr after application.

(Poly-Rock is a product of Plant Maintenance, Inc., Dept. FP, 650 Green Rd., Cleveland 21, Ohio . . . or for more information check 7155 on form opposite last page.)

Electric sweeper operates 8 hours without recharging battery

Has two motors . . . one powers vehicle, other powers brooms and dust control system

Uses: Battery-powered industrial sweeper for use under fume- and odor-free operations.

Features: Sweeper designed to operate an 8-hour shift before it needs recharging. Has two motors, one powering the vehicle and the second the brooms and dust control system. When traveling but not sweeping, only one motor is used, thus saving the batteries. Built-in battery charger makes recharging a simple matter of plugging into any 110v outlet.

Description: Unit has many features of manu-

Sweeper has 3-speed forward, 1-speed reverse transmission, automotive-type steering

KNOW YOUR PAINT COSTS

FREE BOOK makes it easy!

When you have the facts it is easy to select paints of proved performance and to plan your maintenance painting program for greatest efficiency. Substantial savings can be effected. It provides complete records of areas painted, dates, brands used, quantities, costs and durability. All buildings and equipment can be included. It eliminates guesswork and becomes your guide to better painting for years to come. Your letterhead request brings a free copy of this file-size, 24-page book. Write today!

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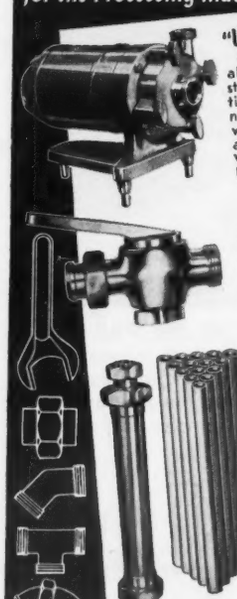
1130-1204 W. 70th, Cleveland 2, Ohio
HEAVY-DUTY MAINTENANCE PAINTS SINCE 1883 • SUBSIDIARY OF PARKER RUST PROOF COMPANY

When inquiring check 7156 opposite last page

Stainless Steel and Nickel Alloy Equipment

THOMSEN

for the Processing Industries



"UNI-MOUNT" SANITARY PUMPS
Complete newly designed line; either all stainless steel or nickel alloy. Smooth steady flow without churning or agitation. Simplified sanitary rotary seal — no glands. Improved impeller design with 4 position outlet. Quick easy disassembly. Also "Uni-Mount" Brine and Water Circulating Pumps in Iron, bronze, or stainless.

VALVES AND FITTINGS
Complete line, stainless steel and nickel alloy; recessed, recessless, and gasket types. Finest precision workmanship in every detail. No pit-holes or rough surfaces. Highly polished to mirror smoothness.

THOMSEN "C-I-P" FITTINGS
Both Thomsen and Davis types. Most practical and sanitary for cleaned-in-place pipelines. Convert old lines and fittings by simple grooving operation. Thomsen C-I-P-VERTER converting machine available.

LINE FILTERS AND TUBING
1", 1½", and 2" connections. 1,000 to 4,000 lbs. per hour capacities. Stainless steel tubing; all lengths and finishes, 1" to 4" dia.

SUPER-SPEED TOOLS
For expanding 1" to 4" sanitary pipeline connections. Leak-proof joints, no welding.

BE WISE BUY WISE

L. C. THOMSEN & SONS, INC., KENOSHA, WIS.

When inquiring check 7157 opposite last page

facturer's gas-powered models. No dust bag need be emptied; dust is deposited in main dirt hopper before entering fan. Basic sweeping swath is 36", can be increased to 60" by adding two slide brooms. Left and right side brooms are available. Sweeper has automotive-type steering and can turn in 5' radius.

(Model 605-E power sweeper for food plant use is made by Wayne Mfg. Co., Dept. FP, 1275 E. Lexington Ave., Pomona, Calif. . . . or for more information check 7158 on form which is located opposite last page.)

Versatile food plant lubricant is non-toxic, tasteless

Grease developed especially for the baking and other food industries is made from a highly refined mineral oil. It meets all USP and NF requirements. It is water-white, tasteless, and odorless. It has no melting point and is unaffected by hot water or high temperatures. The USP mineral oil will go through the gastrointestinal track unchanged, with essentially no absorption of the inorganic jelling agent.

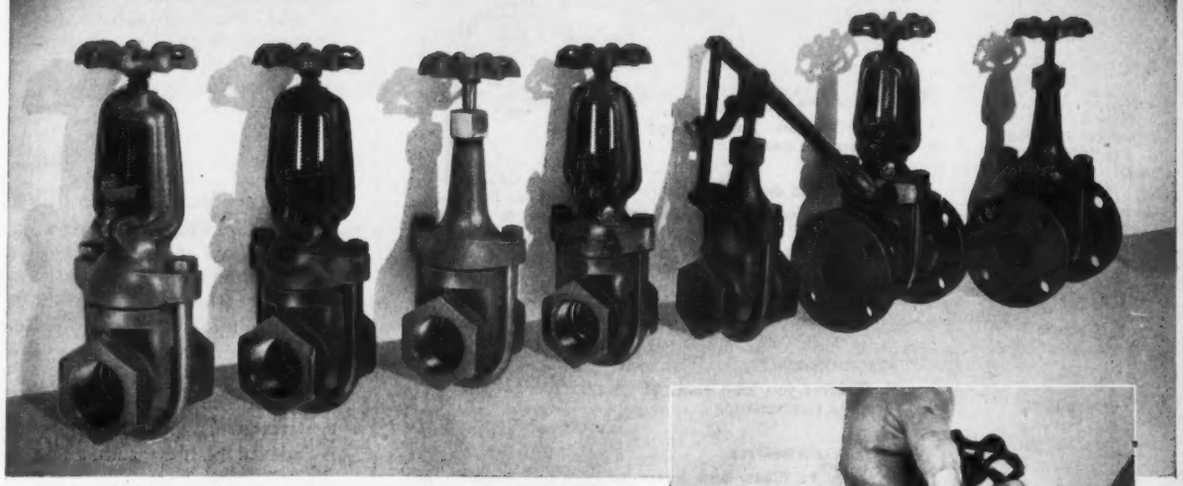
(Bel-Ray No-Tox Grease is a product of Bel-Ray Co., Inc., Dept. FP, Madison, N. J. . . . or for more information check 7159 on form opposite last page.)

Eleven lines of WALWORTH Saddle Type Wedge Gate Valves

Bronze-Mounted — All-Iron — Ni-Resist

Outside Screw and Yoke — Non-Rising Stem — Quick Opening

Flanged Ends — Screwed Ends



Walworth saddle-type wedge gate valves are manufactured in eleven different combinations of designs and materials, seven of which are illustrated above.

Saddle type wedge gate valves are easy to take apart and are particularly suitable for lines requiring frequent cleaning. Walworth Saddle-Type Wedge Gate Valves are available in a variety of designs including OS & Y; Inside Screw Rising Stem, and Sliding Stem Quick Opening types—in Bronze-Mounted, All-Iron, and Ni-Resist. All types are designed to permit repacking under pressure in either the open or closed position.

FOR COMPLETE INFORMATION, See your local Walworth Distributor or write on business stationery for illustrated circular.

DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD

WALWORTH

60 East 42nd Street, New York 17, New York

SUBSIDIARIES: ALOYCO ALLOY STEEL PRODUCTS CO. CONOFLOW CORPORATION GROVE VALVE & REGULATOR CO. SW SOUTHWEST FABRICATING & WELDING CO., INC. MH M & H VALVE & FITTINGS CO. WALWORTH COMPANY OF CANADA, LTD.

When inquiring check 7160 opposite last page

When inquiring check 7161 opposite last page

NEW LITERATURE

Reviews of books and industrial bulletins describing equipment, supplies, services

Other reviews of catalogs, bulletins, books, data sheets, etc. are found throughout the magazine. Many advertisements also mention availability of this type of literature. For a complete alphabetical directory to ALL this new industrial literature, turn to Part I of the "quick-locator" directory on page 101.

Treat aerobic oxidation in Vol I of waste treatment series

First volume of proposed series on biological waste treatment is actually proceedings of First Conference on Biological Waste Treatment, held at Manhattan College. Thirty-three papers, presented by leading experts, cover theory and mechanism of this treatment, theory and design of aeration, sewage treatment, and industrial waste treatment. Book is indexed both by author and subject.

"Biological Treatment of Sewage and Industrial Wastes", Volume I, can be obtained by remitting $10 direct to Reinhold Publishing Corp., Dept. FP, 430 Park Ave., New York 22, N.Y.

Injury rates in food industries revealed in Safety Council handbook revision

According to the 1956 revision of the Safety Council handbook, beet sugar manufacturing results in the most frequent disabling accidents; ice manufacturing the severest in the food industries. Distilleries had the lowest frequency and severity rates of all food production.

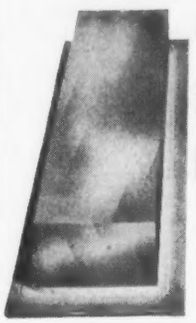
Copies of "Accident Facts" are available for $1.00 from the National Safety Council, Dept. FP, 425 N. Michigan Ave., Chicago 11, Ill.

Management workshop meeting discusses systems, procedures

Book is distillation of stenotype transcripts of Eighth Annual International Systems Meeting. Over 30 discussions and seminars were held, covering many topics, such as work measurement, forms control, work simplification, electronic data

Save with Cesco

Permanent Magnetic Sanitary Plates



REMOVAL of IRON and STEEL TRASH From WET or DRY SOLIDS SAVES EQUIPMENT REPAIRS PROTECTS PRODUCTS

CESCO SANITARY PLATES

- Completely welded from virgin stainless steel to eliminate bacterial accumulation.
- Available in four powers and in a wide range of sizes.
- Present a continuous smooth surface for complete immersion in foods without danger of particles lodging.

FOR REMOVAL OF IRON TRASH

from liquids or slurries to protect product, pumps and screens

specify CESCO SANITARY MAGNETIC TRAPS

FOR REMOVAL OF EMPTY CANS

from canning production lines

specify CESCO EMPTY CAN ELIMINATORS

For complete information on CESCO	Write for bulletin No.
Sanitary Plates	F 223
Sanitary Traps	F 103
Empty Can Eliminator	F 502

CESCO

4025 Sebastopol Hwy. Santa Rosa, California

When inquiring check 7162 opposite lost page

processing, organization planning, and many others. Book is well-illustrated, includes complete subject index.

"Workshop for Management", 500 pages, can be obtained by remitting $6.70 ($6.50 plus 20c postage) direct to Management Publishing Corp., Dept. FP, 22 W. Putnam Ave., Greenwich, Conn.

Tells chemical, abrasion resistance of quick-drying floor seal coating

Bulletin describes protective and sanitary features of a new fast-drying, clear coating for cement, terrazo, wood, and other process plant floors. It emphasizes the high degree of resistance to acids, alkalis, water, oil, lactic, and citric acids, as well as detergents. This offers particular advantages to bakeries, breweries, canneries, dairies, and packing plants. Specific findings on chemical resistance are tabulated.

Tech bul No. 1-105 on ERE-530 Floor Seale and Finish Coating is issued by Robert Langer Co., Dept. FP, 507 5th Ave., New York 17, N.Y. When inquiring specify 7163 on form opposite last page.

'Citrus Fruits in Health and Disease' issued in revised edition

Booklet, "Citrus Fruits in Health and Disease" is now offered in a new, second edition. It includes recent medical research made here and abroad and pays particular attention to vitamin deficiency, especially among teenagers. Also included are references to 160 medical papers on obesity, natural vs synthetic vitamin C, etc.

"Citrus Fruits in Health and Disease" is issued by The Florida Citrus Commission, Dept. FP, Lakeland, Fla. When inquiring specify 7164 on form opposite last page.

Industrial trade show visitors are told what to see; how to see it

Pocket size folder contains 13 suggestions to help you get the most of industrial trade shows. It tells those whose responsibilities inspire interest in these affairs how to utilize time to best advantage; what to see and what not to see; offers other tips that makes attendance more enjoyable and productive.

"13 Suggestions to Help You Get the Most Out of Industrial Trade Shows" is issued by Standard Printing Service, Dept. FP, 30 N. Dearborn St., Chicago 2, Ill. When inquiring specify 7165 on form opposite last page.

Aluminum Foil Packaging as Protection Against Contamination

Report No. 7 of a Series by Reynolds Metals Company

Contamination in packaged goods is usually taken to mean the introduction of harmful impurities into originally pure package contents. This can occur in three ways. One, contamination may take place *through* the packaging, from the outside. Two, it may be caused by some taste or odor generated by the packaging material itself. Three, it may be caused by microorganisms which find lodging in the surface of a packaging material.

In countering all of these possible causes of contamination, aluminum foil rates very high. Its efficiency is attested by the widespread use of foil packaging among food processors, who are always zealous in safeguarding the quality of their products. Aluminum foil's freedom from contamination and resistance to contaminants are properties well recognized by homemakers in their daily use of Reynolds Wrap, pure aluminum foil, in their own kitchens.

In preventing contamination by the first method named above, aluminum foil acts as a *barrier*. Here it excels. It not only protects package contents from such outside contaminants as dust, liquids and air borne impurities; it also performs the tougher jobs of protecting against moisture vapor, noxious gases and odors. An example of such protection is the use of aluminum foil for packaging butter and margarine—products highly susceptible to absorption of foreign odors and flavors.

©Reynolds Metals Company, Louisville, Kentucky

The attached graph compares the score* of butter wrapped in foil with butter wrapped in a commercially used parchment paper, during a three-day exposure to garlic odor.

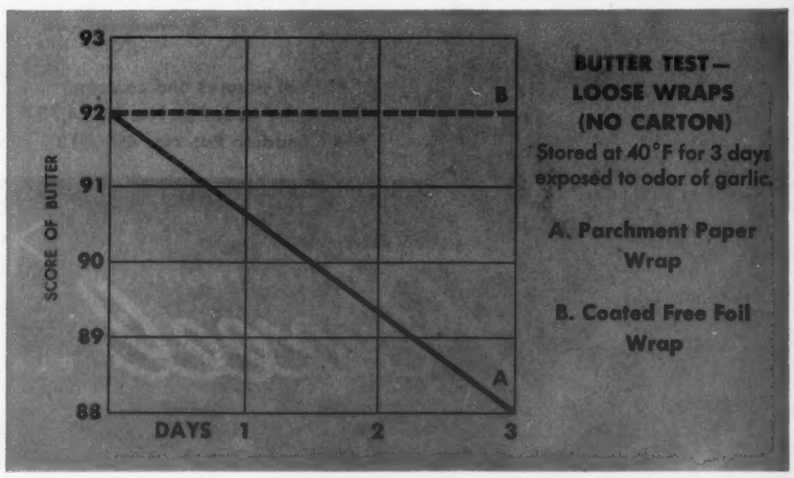
As to contamination by the packaging material itself—this, of course, is not possible with aluminum foil. Naturally free of any taste or odor, aluminum foil will not develop off-tastes or odors even under extreme temperature variations.

Aluminum foil is also completely non-toxic. This is readily apparent from the long established preference for aluminum cooking utensils and from the more recent and fast growing use of aluminum foil containers for heat-and-serve food products. Aluminum foil is officially accepted by the Pure Food and Drug Administration of the United States Department of Agriculture, which prohibits the use of toxic materials for food packaging.

The third indicated method of contamination—by microorganisms on the surface of a packaging material—is defeated by the pure metallic surface of aluminum foil, which does not support growth of molds, yeast or bacteria. Furthermore, the annealing process for aluminum foil subjects the material to temperatures far in excess of those necessary to destroy any microorganisms.

Reynolds research facilities and experience in solving particular packaging problems requiring the utmost in protection against contamination are available through Reynolds regional representatives. Or **Reynolds Metals Company**, General Sales Office, Louisville 1, Ky.

*Score is a measure of butter quality premised on a maximum rating of 100.



When inquiring check 7166 opposite last page

Because you're proud of your product!

- BEAUTIFY . . . PROTECT . . . PROMOTE!
- CRYSTAL CLEAR VISIBILITY STIMULATES IMPULSE SALES
- ATTRACTIVE RE-USE FEATURES

Complete product protection . . . safe for foods, dairy products and hundreds of other packaged items.

Patented vapor-proof double seal locks in flavor and freshness.

Designed for use on automatic filling, dispensing and capping equipment. Light weight, compact nesting solve inventory and handling problems.

Investigate Flexeel now for your product. Stock shapes and sizes or custom design for your needs.

Write for Flexeel* Facts Bulletin

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All Flexeel closures and containers covered by U. S. Pat. No. 2,614,727 and Canadian Pat. No. 491,813.

LEAKPROOF Flexeel PLASTIC CONTAINERS

When inquiring check 7167 opposite last page

new literature

Release management catalog of books and films

1956-57 catalog of 44 pages contains research publications in all management areas, including latest developments in specialized fields.

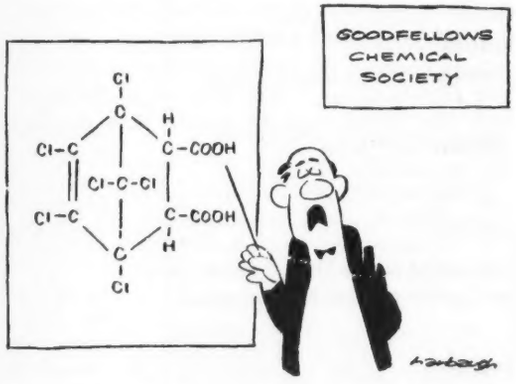
Books of interest to the food industry include a basic guide to preparing packaging specifications, getting the most from product research and development, a series on manufacturing problems, another on packaging, and others.

Catalog, AMA Management Bookshelf, is available from Publication Service, American Management Association, Dept. FP, 1515 Broadway, New York 36, N.Y. Specify 7168 opposite last page.

Bulletin gives suggestion on distributing systems and automatic lubricators

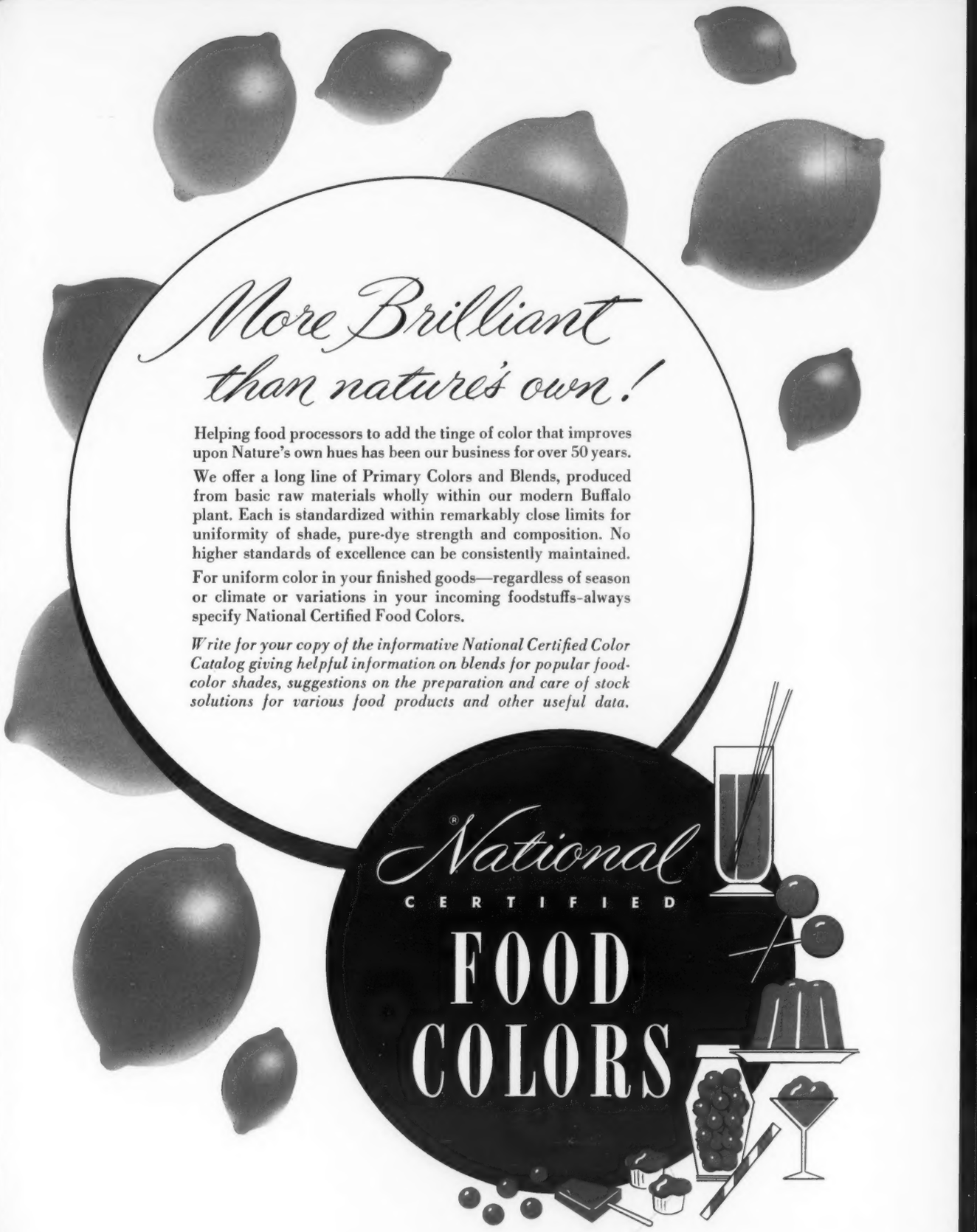
Distributing systems for line of automatic lubricators are pictured and described in a 12-page bulletin. Suggestions are given for planning a typical system as well as the application of specific lubrication components. Reservoirs, tubing, and fittings are discussed in separate sections.

Bul on distribution system — 4A — is issued by Bijur Lubricating Corp., Dept. FP, Rochelle Park, N. J. Specify 7169 opposite last page.



"Now the hydrogen molecule gets the ball from center, fakes to the chlorine, picks up his interference and . . ."

For more information on product at right, specify 7170 . . . see information request blank opposite last page.



More Brilliant than nature's own!

Helping food processors to add the tinge of color that improves upon Nature's own hues has been our business for over 50 years.

We offer a long line of Primary Colors and Blends, produced from basic raw materials wholly within our modern Buffalo plant. Each is standardized within remarkably close limits for uniformity of shade, pure-dye strength and composition. No higher standards of excellence can be consistently maintained.

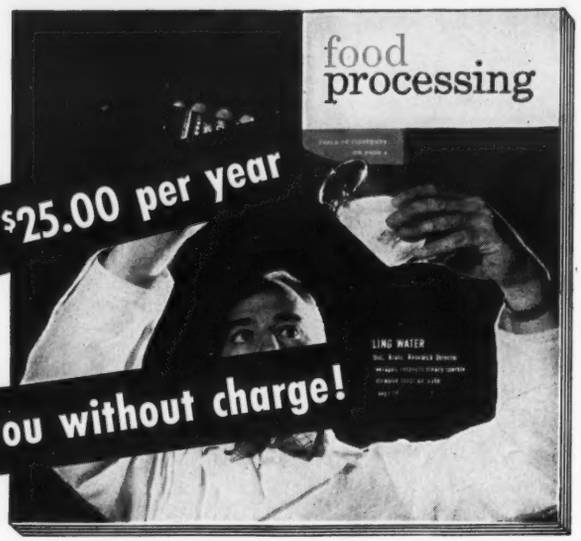
For uniform color in your finished goods—regardless of season or climate or variations in your incoming foodstuffs-always specify National Certified Food Colors.

Write for your copy of the informative National Certified Color Catalog giving helpful information on blends for popular food-color shades, suggestions on the preparation and care of stock solutions for various food products and other useful data.

CERTIFIED COLOR DIVISION
NATIONAL ANILINE DIVISION ALLIED CHEMICAL & DYE CORPORATION • 40 RECTOR ST., NEW YORK 6, N. Y.
Boston Charlotte Chicago Philadelphia Portland, Ore. San Francisco Toronto

This magazine costs more than $25.00 per year

...yet comes to you without charge!



Why? Maybe, like many others, you've wondered why FOOD PROCESSING comes to you *without charge*—while, perhaps, you pay a subscription price for other business magazines.

Maybe you've thought publishers *make money* when they sell you a $3.00 or a $5.00 subscription.

No—publishers lose money . . . yes, most business magazines lose money when they sell a subscription — not only because the magazine costs more to produce than the subscription price brings in — but also because the cost of making such sales exceeds the income for $3.00 or $5.00 subscriptions.

Advertisers pay the bills — You see, it's the money that comes from advertising that keeps the business magazine publisher in business. So, logically, such advertisers *demand* best possible coverage of folks like you—the important key men who exercise buying power.

So—FOOD PROCESSING "hand-picks" best readers . . . and sends the magazine to these key folks, without charge.

For you simply can't get maximum coverage of these important folks by trying to sell subscriptions. These men, limited in numbers, are scattered all over the U.S.A.: travel and/or direct mail cost money; a large share "forget to renew" each year; and, no matter how much time, money and pressure you put on them, there are always some important men who will never buy.

FOOD PROCESSING gets best circulation . . . So, as you can see, to get the best, most effective circulation coverage, the best way is to "hand-pick" the right readers, then send the magazine to them. This gives values to advertisers which can't be gotten in any other way.

That's why . . . FOOD PROCESSING "hand-picks" only qualified readers . . . Men Who Manage food processing plants . . . presidents, partners, plant managers, foremen, food technologists, engineers, chemists, directors of research, etc. Then the editors make the magazine so interesting, so valuable, these folks want to read it.*

That's why FOOD PROCESSING spends many thousands of dollars on each issue—to give you this valuable service costing more than $25.00 per year, per reader. That's why FOOD PROCESSING comes to you without charge—*you are an important reader in the food field.*

Food Processing* *Every issue proves this qualified readership . . . by unequalled response from these key readers. May we show you the evidence?*

Food Processing

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Milwaukee 1, Wisconsin

CHAIN Belt Company
4699 West Greenfield Ave.
Milwaukee 1, Wisconsin
Send me today my copy of "Why Industrial Waste Treatment?"

Name.....
Company.....
Address.....
City.....*State*.....

When inquiring check 7171 opposite last page

Use of phase contrast microscope in study of starch granules

Six-page article on use of the phase contrast microscope to study granule changes of starches, modified starches, and flours during processing, is offered in reprint form.

Although the research was designed to accumulate reference material on the normal appearance of starches and flours under various degrees of expansion and to check effects of higher temperatures on granular material, it has been found useful in many other ways. The phase microscope was shown to be an excellent tool for the examination of starch both as single entities and as part of natural food substances. As an example, some foreign-grown wheats which had abnormally low viscosities were found to have very small wheat starch granules. Another use has been to determine degree to which a starch has been cooked when new methods of processing are employed, as for example changing from a kettle-cooked material to a continuous line process. The procedure is to compare by means of phase contrast microscopy the degree of expansion of the granule in the new plant process with those of a carefully prepared laboratory series of the same thickener.

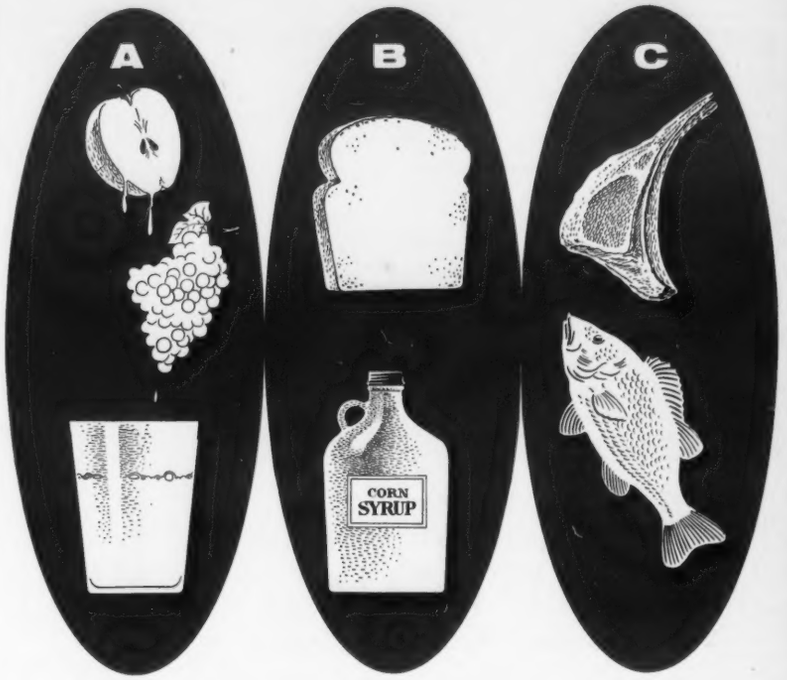
It is also possible to study the amount of processing needed to achieve the best utilization of ingredient materials. An example is extension of cooking of rice flour in order to obtain the maximum expansion of starch granules. When it is necessary to control the maximum to which a starch should be cooked, adherence to processing details can be quickly checked by comparison with prepared standards. This technique is useful in control work on unsterilized products such as salad dressings and frozen products.

Reprints of "Phase Contrast Microscopy in the Examination of Starch Granules", by Helen B. Wigman, William W. Leathen, and Martha J. Brackemeyer, are available from Mellon Institute of Industrial Research, University of Pittsburgh, Pittsburgh, Pa. When inquiring specify 7172 on form opposite last page.

Specifies detergent concentration, water temperature for 25 food operations

Main feature of 6-page fold-out brochure, describing a sodium metasilicate detergent, is detailed table. Information is given concerning detergent concentration, water temperature, and general directions for more than 25 food cleaning operations.

"Cleaning in Food Industries", illustrated, pocket-size, is published by Philadelphia Quartz Co., Dept. FP, 1158 Public Ledger Bldg., Philadelphia 6, Pa. Specify 7173 opposite last page.



NATURAL ENZYMES
for food processing

Rohm & Haas commercial enzymes are all natural products . . . and among the most effective aids in food processing.

They are easy to use and are well suited to the mild processing conditions common to the food industry. In service they provide many benefits. For example, they clarify fruit juices, tenderize meats, aid in the production of pre-cooked breakfast cereals, improve the texture of bread, and reduce the viscosity of chocolate sirups.

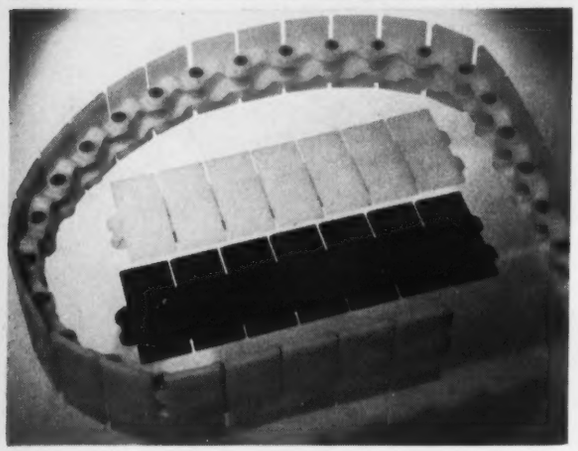
Rohm & Haas enzymes catalyze specific reactions; unwanted by-products are not formed. And little enzyme goes a long way toward increased production efficiency and greater consumer sales appeal.

Write to Department SP outlining your food processing problem.

A **PECTINASE:** fruit juices, concentrates, wines
B **DIASTASE:** bread, cereal-derived products, corn sirup
C **PROTEASE:** meat, fish, beer

Chemicals for Industry
ROHM & HAAS COMPANY
WASHINGTON SQUARE, PHILADELPHIA 5, PA.
Representatives in principal foreign countries

When inquiring check 7174 opposite last page



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FIRST AGAIN

With Stainless Retaining Rings

COMES IN BOTH BLACK & WHITE NYLON

• No Lubrication Needed • No Soap or Water
• Quieter • Longer Life • Priced Right
Does Not Scratch Cans or Glass

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When inquiring check 7175 opposite last page

Seakem "Colloids Out of the Sea"*

unique...

both in their reactivity with proteins and their ability to work well "in combination" with other colloidal materials

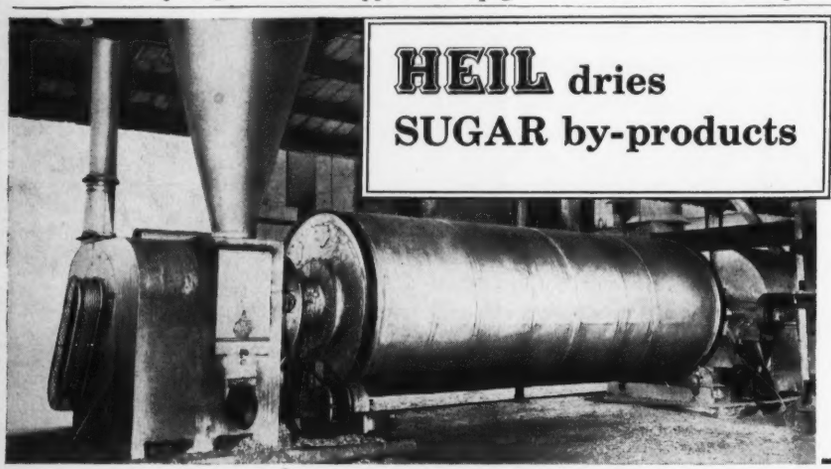
*Over 20 distinct types of SeaKem Stabilizers are available . . . each one a highly refined derivative of Irish Moss and standardized for a particular gelling, thickening, suspending or other function.

Ask to be put on our mailing list to receive SeaKem EXTRACTS — the exciting house organ that "tells all" about SeaKem "Colloids Out of the Sea"

Any special application problems? Write today!

Seaplant CHEMICAL CORPORATION
63 David Street, New Bedford, Mass.

When inquiring check 7176 opposite last page



HEIL dries SUGAR by-products

24 HOURS A DAY
...7 DAYS A WEEK
...5 MONTHS STRAIGHT!

This is the dependable job a Heil Dehydrator is doing for the United States Sugar Corporation.

"Bagasse leaves the sugar mill at approximately 50% moisture which is reduced in the Heil dehydrator to 10%.
"The bagasse is then screened, baled, and sold as poultry litter. We produce about 80 tons every 24 hours with our Heil dehydrator."

J. B. BOY
United States Sugar Corporation

EXCLUSIVE 3-pass drum provides 3-stage drying in a single compact unit.

Compound flights on both surfaces of inner and intermediate drums provide ideal exposure of product to drying medium . . . increased capacity . . . reduced air temperature at outlet . . . reduced fuel consumption per ton of water evaporated . . . elimination of surging within the drum . . . assurance of highest quality and uniformity in moisture and color.

Further advantages of 1957 models are improved furnace for oil, gas or combination fuels . . . electric controls . . . push-button electric ignition . . . improved one-piece drum drive with heavy-duty drive chain.

Let us know the products you're interested in drying and we'll help you to do it most efficiently.

THE HEIL CO.

Manufacturers of Ardrier Dehydrators for the Arnold Dryer Company

Dept. 801, 3000 West Montana Street Milwaukee 1, Wisconsin

ARDRIER Dehydrators are used for

Antibiotic Residues	Carrots	Fish Meal	Sages
Apple Pomace	Citrus Waste	Garbage Tankage	Sugar Cane Bagasse
Beet Pulp	Corncob Meal	Grain By-Products	Tomato Pomace
Brewers' Grains	Crab Scrap	Leafy Drug Plants	Wet Corn Millers'
Canning By-Products	Distillers' Grains	Packing House By-Products	By-Products
	Feathers	Potatoes, Sweet and White	

When inquiring check 7177 opposite last page

new literature

Details nutrient content of 51 frozen foods

Report by Wisconsin Research Alumni Foundation, Madison, Wis., of a 3-year analysis of nutritional composition of 51 frozen foods appears in 12-page reprint. Results show content of 8 vitamins, 6 minerals, and 7 proximate components, secured by testing 27,562 packages of frozen food. The packages were taken from the regular commercial production of more than 150 freezing plants throughout the country during two growing seasons. The authors make no attempt to compare the values with those which are available for competitive food products.

"How Much Nutrition in Frozen Foods?", a reprint, is available from National Assn. of Frozen Food Packers, Dept. FP, 1415 K St. NW, Washington 5, D.C.

Present application details on industrial insulations

Catalog compiles essential information on industrial insulations, including descriptions of insulation types, pricing and ordering details, application information, operating temperatures, and engineering data. The insulation products are reportedly effective from 0 to 1800° Fahrenheit.

The catalog contains 132 pages including 21 graphs, 104 photographs, 84 sketches, and 74 tables. It presents specific insulation data for pipe, duct, equipment and cold storage insulations.

A.I.A File No. 37-D, Industrial Isulations Manual, is available from Owens-Corning Fiberglas Corp., Dept. FP, Toledo 1, Ohio . . . or for more information check 7178 on form opposite last page.

Compact air compressors oil and dust-free

Vertical cylinder makes compact unit, ready to install and operate.

Bulletin of four pages plus an insert describes purified air compressors with the following features: separator removes moisture automatically; upper air compression chambers sealed against air contamination; stuffing boxes are not required.

Cylinders do not utilize carbon rings, leather cups, or fiber rings, and operation is completely automatic and silent. Capacities are from 50 to 350 cfm.

Bul No. 24A, Hasselberg Oil-free Compressor, is available from Hasselberg Co., Dept. FP, 7703 W. Roosevelt Rd., Forest Park, Ill. When inquiring specify 7179 on form opposite last page.

Discussed in this issue . . .

I. new industrial literature
II. processes, equipment, ingredients, and supplies

Use this two-part "quick-locator" when you want information or new industrial literature on a specific type of process, equipment, ingredient, or supply mentioned in the articles or advertisements in this magazine. For your convenience, this directory is divided into two sections: the first covers articles and advertisements which specifically mention availability of bulletins, data sheets, etc.; the second, articles and advertisements which describe processes, equipment, ingredients, and supplies.

If you want copies of these bulletins or more information on other listings you can write direct to the manufacturer . . . or turn to inside back cover and use the convenient information request reply envelope. This "Reader Service slip" is provided by the publisher . . . no obligation or charge, of course, to you. The publisher contacts the supplier concerned for you — information comes to you direct.

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uniformly fine flavor

Don't give normal seasonal or regional variations in flavor a second thought when you use MSG (pure mono sodium glutamate) in food processing and preparation.

MSG controls the over-all flavor features of quality protein foods. By blending and strengthening their naturally fresh taste MSG can create a uniform flavor identity the consumer recognizes. It is economical and easy to use.

Always rely on Great Western MSG to accentuate and maintain the fine fresh flavor characteristics of your product. Insure *uniform flavor-quality* to develop dependable customer brand preference.

Discover **"The Secret of Good Taste"** *— Try Great Western's*

GREAT WESTERN MSG
99+% Pure Mono Sodium Glutamate Crystals

in: vegetables, meats, canned soups, poultry, seafood, sauces, gravies, seasonings, and frozen foods.

A Product of
AMERICAN AGRICULTURE

We invite inquiries from current and prospective users of MSG

THE GREAT WESTERN SUGAR COMPANY
Denver, Colorado

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Behind today's best sellers . . . .

THE CUSTOM ENGINEERING, DEPENDABILITY AND ECONOMY OF

Packomatic

T.M. Reg. U.S. Pat. Off.

AUTOMATIC PACKAGING

A Packomatic machine sends the "twenty-mule team" on its way faster . . .

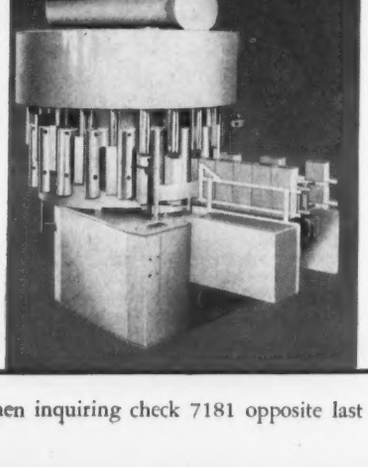
At Pacific Coast Borax Company, the Telescoping Volumetric Filler automatically measures 8 and 16 ounces of "Boraxo" into metal containers at the rate of 120 units per minute.

If you're a manufacturer of hard-to-handle dry products, write us about the Packomatic TVF and our dustless method of filling cartons or cans.

In fact, if *yours* is a problem of packaging — whatever the type, whatever your equipment budget — there's a Packomatic machine to save you time and money.

TELESCOPING VOLUMETRIC FILLER

A high-speed production machine, the TVF may be factory customized to filll up to 300 units per minute—round or rectangular cans or cartons. Its operation is practically dustless when handling such difficult products as insecticides, pancake flour, caustic soda, cleansers, detergents and soap powders. Phone collect, or write for literature about the economy, accuracy and speed of the PACKOMATIC TVF.



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Over 50 years' experience in Customized Packaging Equipment

J. L. FERGUSON CO.
Joliet, Illinois

Other PACKOMATIC machines include the Bale Sealer — Case Sealers — Opener-Loaders — Case Imprinters — Telescoping Volumetric Filler — Packer-Gluers. Units available, semi-automatic or fully-automatic depending on your needs.

New York, Chicago, Cleveland, Boston, Tampa, Baltimore, Portland, Denver, Los Angeles, San Francisco, Seattle, New Orleans, Louisville, Kansas City and all principal Canadian cities.

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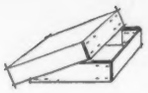
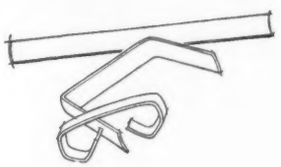


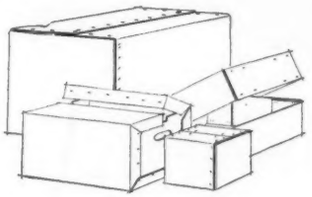
CLOSURE IDEA BULLETIN

For Users of Fibreboard Boxes

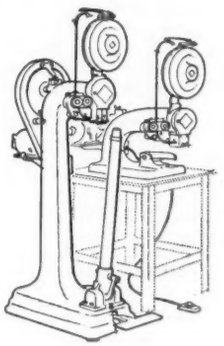
ARCUATE--A recent development by Acme Steel is the first major improvement in wire stitching for fibreboard box closures in years. Called Arcuate, it rolls an arc into the stitching wire, and thus adds to the driving and clinching strength of the stitch without increasing wire size. There is less wear on parts, so machine performance is improved, maintenance costs reduced.



FASTEST GROWING U.S. INDUSTRIES. Non-ferrous metals grew 123% this year, pulp and paper 83%, steel 82%. And Acme Steel Silverstitch Wire will be chosen by approximately two out of every three users of stitched fibreboard shipping containers among these forward-moving, progressive industries.



VERSATILE CLOSURE PROCESS--Uniform and mixed box sizes and styles can be closed faster, more securely and at lower cost by versatile wire stitching. Acme Steel makes a full line of high production, economical-to-operate wire stitching machines and accessories. For example, when using an Acme Steel 50-pound coil holder, you can make up to 100,000 stitches without reloading.



ASK YOUR ACME IDEA MAN. He can describe all the benefits of wire stitching. Or write today for complete information: Dept. FGW-17, Acme Steel Products Division, Acme Steel Company, Chicago 27, Illinois.

ACME STEEL **WIRE STITCHING**

When inquiring check 7182 opposite last page

Each of these 7 Edmont lines is job-fitted to cut costs

Neox No. 924 . . . 8 styles

NEW "FLEXIBLE NEOPRENE" GLOVE COATING now makes Edmont's "Neox" gloves the most comfortable neoprene gloves available. Resist cutting, abrasion, oils, solvents, heat. Uniform in quality.

Grab-It No. 62W. . . 11 styles

NON-SLIP GRIP, WET OR DRY, makes Grab-Its the safest general handling gloves on the market. Rough textured natural rubber coating. Curved-finger wing-thumb pattern gives perfect fit.

Werx No. 151 . . . 2 styles

OUTWEARS CANVAS 4 TO 1, and costs far less than goatskin. Edmont's Werx gloves, impregnated with plastic, are ideal for many jobs of material handling. Provide excellent grip and dexterity. Lint-free. Washable.

Monkey Grip No. 31 . . . 13 styles

JOB-FITTED FOR ABRASIVE WORK: Special vinyl coating on Monkey Grip gloves insure uniform long wear. Edmont's exclusive seamless palm, wing thumb, curved-finger pattern fits every part of the hand.

Redmont No. 938 . . . 6 styles

HEAVY DUTY LIQUID-PROOF Redmont gloves have a 30% thicker coating of red Neox (reinforced neoprene) with special non-slip finish. Wing thumb, curved finger, seamless palm for comfortable wear.

Grappler No. 363 . . . 5 styles

EXCEPTIONAL WET GRIP is provided by Edmont Grapplers. Specially reinforced plastic coating is for heavy duty service. Outwears ordinary plastic coatings up to 50%.

Snorkel No. 404 . . . 3 styles

SUPER-FLEXIBLE LIQUID-PROOF GLOVES. Edmont Snorkels combine working ease with tough protection. Abrasion-resistant vinyl coating has special finish that gives outstanding wet or dry grip. 2-piece jersey liner is Edmont's hand-fitting wing-thumb, curved-finger pattern.

FREE TEST OFFER TO LISTED FIRMS: Tell us your operation, materials handled and temperature condition. We will recommend glove and coating that best fit job and supply samples for on-the-job testing.

EDMONT MANUFACTURING COMPANY
1212 Walnut Street, Coshocton, Ohio
In Canada write MSA, Toronto

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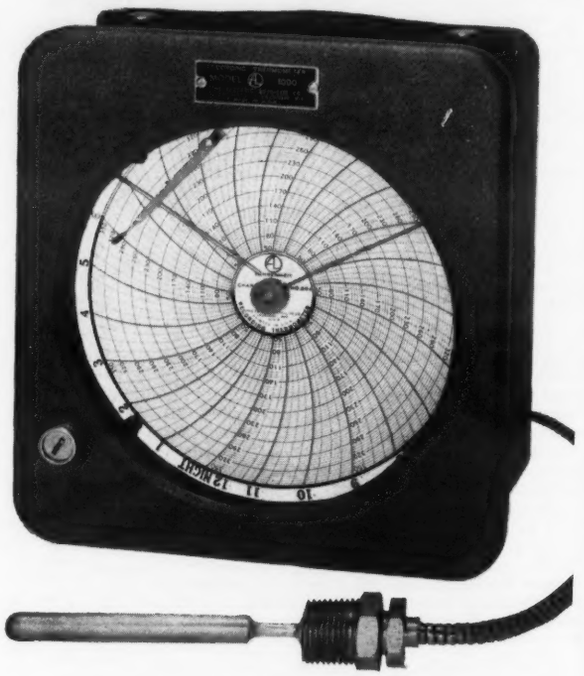
New TEMPERATURE RECORDER...

AUTO-LITE



Available with 24-hour or 7-day electric or mechanical chart drive.

Model 1000 is the latest addition to the Auto-Lite line of temperature recorders and indicators. It has evenly calibrated, 6-inch chart . . . attractive die-cast case. Various standard chart ranges from minus 40°F. to plus 550°F. The style illustrated is portable type, with capillary tubing. Also available for mounting on panel boards or walls. Obtainable with a cycle indicator for refrigeration. Priced from $49.50. Write for further information.

THE ELECTRIC AUTO-LITE COMPANY
INSTRUMENT AND GAUGE DIVISION
TOLEDO 1, OHIO
NEW YORK CHICAGO SARNIA, ONTARIO

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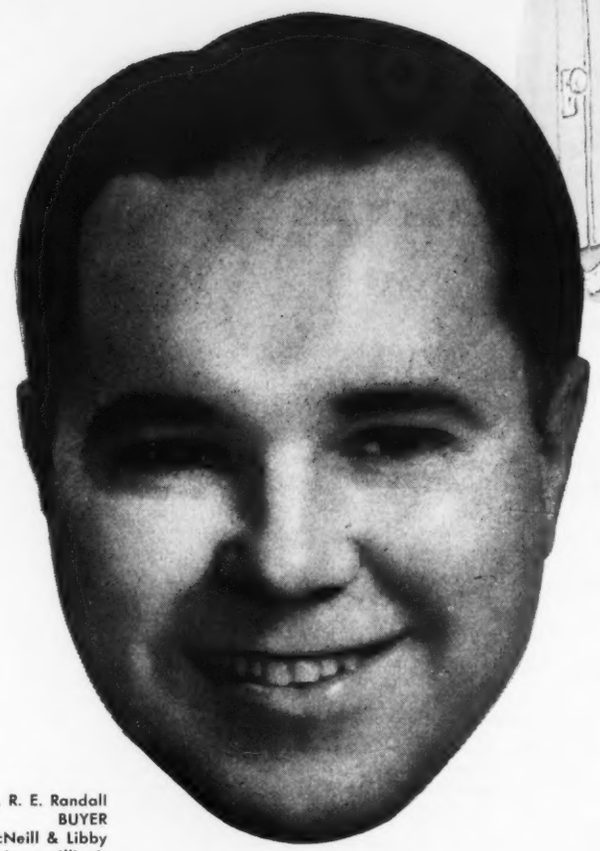

Mr. R. E. Randall
BUYER
Libby, McNeill & Libby
Chicago, Illinois

"People often are hoggish about paper towels"

WITHOUT realizing it they'll use from two to four single fold towels just for drying.
— wasting up to 40 inches of towelling.
But you can control this waste.
With savings up to 40%!
How?
*By installing WESTROLL TOWELS in West Micromatic Cabinets.**

PEOPLE quickly unroll as little or as much as they want. But without realizing it they take less. Averaging 17 inches of soft, absorbent WESTROLL.
Saves janitors' time, too.
— one filling of the tamper-proof cabinet equals four of a single fold towel dispenser.
— there's less litter to clean up.
And washrooms are cleaner, neater.
**Cabinets are loaned.*

"Westroll Towels cost us 30% less across the U.S.A."

"When you're concerned with a multi-plant operation such as ours, a small savings in an expendable item such as paper towels can mean many valuable dollars saved at the end of the year. We found, by using Westroll Towels in the Micromatic Cabinet, that our costs were reduced by 30% based on a closely supervised comparative test against interfold towels," says MR. R. E. RANDALL, Buyer for Libby, McNeill & Libby, Chicago.

"With these savings, it was only natural that we should shift a major portion of our plant facilities throughout the country over to this efficient and economical toweling. Our washrooms remain neater, too; and we realize additional savings in cabinet-filling time and janitor clean-up time."

Would similar economies interest you? Send the coupon.

LARGEST COMPANY OF ITS KIND IN THE WORLD

WEST DISINFECTING Company

WEST DISINFECTING COMPANY, 42-16 West Street, Long Island City 1, N. Y.
Branches in principal cities • In Canada: 5621-23 Casgrain Ave., Montreal

☐ Please send your free folder on cutting towel costs with Westroll.
☐ Please have a West representative telephone for an appointment.

Name.....

Position.....

Mail this coupon with your letterhead to Dept. 23

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the versatile SHEFTENE family of milk proteins

are functionally designed to improve your products . . . to solve your processing problems.

Here are some new uses which may help you today . . .

SHEFTENE 60, a milk protein concentrate, as a supplement for dietary foods in geriatric feeding.

SHEFTENE Sodium Caseinate as a fat-blocking ingredient in doughnut and bakery mixes.

SHEFTENE Whipping Compound as a foaming agent producing optimum results in whipped toppings with no off flavors or color.

Other new uses of SHEFTENE products can possibly help solve your problems. Write for literature and samples today.

SHEFFIELD CHEMICAL

NORWICH, NEW YORK

Branch Office, 1267 Sixth Ave., New York 19, N.Y.

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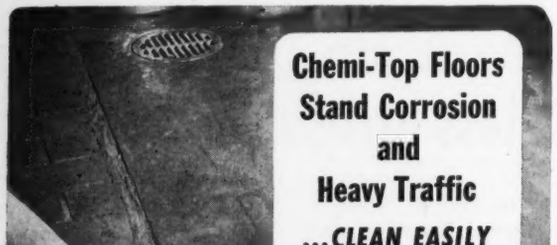

yet save $1.10 per sq. ft. over Tile Flooring!

At one large dairy, where floor corrosion was a constant problem, tile floors had to be regrouted once a year with an acid-resisting grout. Cost was $1.10 per sq. ft. Now the dairy is resurfacing these floors with long-lasting **Chemi-Top floor surfacing compound**—eliminating the cost of yearly regrouting.

Chemi-Top floor surfacing compound trowels on, gives a dense, non-porous, rock-hard floor that stands corrosive action and heavy traffic. **Chemi-Top floors** are impervious to all but the most violent chemicals—won't react to salts, oils, alkali, grease or most acids. Dense surface resists bacteria or chemical attack—is easy to keep sanitary. Spilled industrial chemicals, brine, ink, greases or dyes can be easily wiped up. **Chemi-Top** costs only about $1.00 per sq. ft. for material—can be applied by plant labor with substantial saving in cost of installation.

Send for Chemi-Top folder and technical data, with information on resistance to 38 corrosive chemical reagents. Send us your floor problem. *Write Dept.FP-1.*

See us at Plant Maintenance Show Booth No. 1247.

THE GARLAND COMPANY

Cleveland 5, Ohio

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- EXTRA VITAMIN POTENCY Biological assays show that Barnett's Carotene has more vitamin A potency than we claim.
- GREATER SOLUBILITY An important factor in uniform distribution of color and time-saving processing.
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- WIDE COMMERCIAL ACCEPTANCE Used by many leading food processors (margarine, shortening, bakery and dairy products).
- DIFFERENT FORMS Offered as Carotene Crystals and as Carotene in Oil of various potencies. Microcrystalline Carotene in Oil (particularly adapted for use in margarine and shortening) is covered by U.S. Patent #2,477,928.
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BARNETT Laboratories INC.

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When your plans call for variable speed it isn't necessary to use a cumbersome, expensive motor drive. Simple to install, Roto-Cone drives operate on the V to V principle providing up to 40% more pulling power and greater belt life.

Belt travels on a fixed center line as exclusive operating principle provides equal and opposite lateral movement of *both* discs of Roto-Cone variable speed pulley. Up to 8 to 1 speed change ratio. Sizes from ⅛ to 20 H.P. The Roto-Cone line is complete . . . variable speed pulleys, standard and countershaft adjustable motor bases, V-Belts, and V-driven sheaves. *Write for 30-page catalog.*

Gerbing MANUFACTURING CORP.

Northbrook, Ill. (Suburb of Chicago)

Dept. F-1

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that's interesting

'Soft-serve' ice cream put on wheels

The soft-serve ice cream business has been "put on wheels" with units designed in every particular for merchandising frozen custards. They are now on the job in many states, Puerto Rico, and even the Middle East. They are also in use at Army Posts. Various state regulations have been anticipated in providing a hot water storage tank, sewer system, etc. Besides the frozen custard machine there is a fountainette, milk shake mixer, root beer barrel, custard mix storage tank, compressor, and generator. Lighting is fluorescent. Air conditioning an optional feature at extra cost. Body mounts on Ford 1-ton chassis. (Polar Cub Mobile Units, Inc., Retreat Rd., Vincetown, N. J.)

De-icer

A tightly sealed bottle of heavily salted water which can be carried in an automobile glove compartment provides an economical means of de-icing windshields.

Proposed world calendar still hopes for adoption

Proponents of the so-called world calendar will have to look to the future as another year rolls around without general favorable action on adoption. The world calendar would divide the year into four quarters of 91 days each. First month of each quarter would have 31 days, others 30 days. Total would be 364 days with extra day being identified as "world day". Our present traditional leap year day would be replaced with a day between June 30 and July 1 every four years.

No other spray-dried flavors are more carefully guarded than Norda Nodes, to insure complete excellence, from starting spray to finished powder.

Nothing's known like Norda Nodes

. . . Spray-dried for you by Norda

Producing just-ordinary spray-dried flavors never would have interested Norda. That is why Norda developed Norda Nodes, and why Norda Nodes come only from Norda.

Norda men are flavor experts. It took their years of experienced skills to create the methods, help devise the machines, that make Norda Nodes possible.

Here are your true-fruit flavors, with every rich, real flavor essential locked ingeniously in tiny, colloid-coated "grains", that instantly flood foods with flavor when dry mixes are liquefied.

Uniform product flavor results. Flavors stay fresh and changeless, through much longer shelf life, and storage. Norda Nodes carry your quality through, from you to your customers.

Send your letterhead today for *free samples*.

"Flavor it with a Favorite"— Norda Nodes

Norda

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601 West 26th Street, New York, N. Y.

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THE Sealva STORY OF "Sealed-In" Flavors

Some years ago, van Ameringen-Haebler, Inc. developed and introduced SEALVA Flavors, the first truly hermetically "sealed-in" high quality dry flavors. This new technique in flavor-making was immediately recognized and enthusiastically accepted by the food industry.

Since those early days, continuing improvements in sealing agents and drying techniques plus the basic superiority in the quality of the natural or imitation flavors themselves, have combined to maintain SEALVA's place as the ultimate in fully protected quality flavors.

What can SEALVA do for your product?

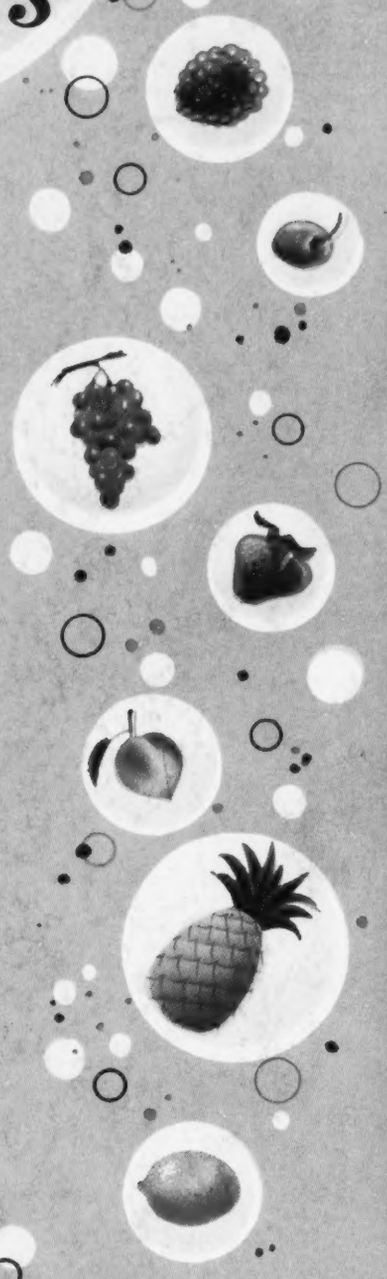
The adoption of SEALVA Flavors makes possible the use of absolute top quality flavor in dry mixes, because the finest of flavors are fully protected in their powdered form against the ravages of deterioration caused by evaporation, oxidation, extended shelf-life, and they are practically impervious to chemical reaction with other ingredients in a mix or compound.

Where can SEALVA Flavors be used to advantage?

SEALVA Flavors are ideal in any relatively dry, powdered, grained, or flaked mixture to insure inert flavor retention in such products as cake mixes, gelatin desserts, cereals, drink powders, pudding mixes, dairy mixes, ice cream mixes, candies (pressed wafer), pharmaceuticals, proprietaries, oil emulsions, etc.

For better flavor we ask you to investigate SEALVA Flavors before you make your final decision on this most important ingredient.

We are prepared to give you suggestions as to the methods of readily evaluating "sealed-in" flavors for your particular product and also will be happy to assist with technical recommendations for the application of SEALVA Flavors to improve your product. Literature and adequate samples are available.



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